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AMALA INSTITUTE OF MEDICAL SCIENCES, THRISSUR

Affiliated to Kerala University of Health Sciences (KUHS)

SYLLABUS FOR UG PROGRAMME

BACHELOR OF MEDICINE AND BACHELOR OF SURGERY(MBBS)

MEDICAL COUNCIL OF INDIA

COMPETENCY BASED UNDERGRADUATE CURRICULUM FOR THE INDIAN MEDICAL GRADUATE

Knows → Knows how → Shows → Shows how → Performs

Enumerate | Describe | Observe | Demonstrate | Assist

Counsel

Analyse

Guide

Correlate

Critique

Prescribe

Integrate

Communicate

Interpret

Collaborate

Clinician | Communicator | Team Leader | Professional | Lifelong Learner

Knowledge | Skills | Attitude | Values | Responsiveness | Communication

VOLUME-I (2018)

COMPETENCY BASED UNDERGRADUATE CURRICULUM FOR THE INDIAN MEDICAL GRADUATE

2018

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भारतीय आयुर्विज्ञान परिषद के अधिक्रमण में शासी बोर्ड

BOARD OF GOVERNORS
IN SUPERSESSION OF MEDICAL COUNCIL OF INDIA

FOREWORD

The Medical Council of India, aware of its responsibilities in creation of trained health manpower, has been engaged for the past few years in updating the medical curriculum for undergraduates and postgraduates to be in consonance with the changing health needs of the country. The task of updating and reorganization of the postgraduate curriculum in nearly 50 broad specialty disciplines to the competency pattern was accomplished by the Academic Cell of the Council with the help of subject experts and members of its Reconciliation Board and have been uploaded on the Council Website for use of the medical fraternity.

The Council visualized that the Indian Medical Graduate, at the end of the undergraduate training program, should be able to recognize "health for all" as a national goal and should be able to fulfill his/her societal obligations towards the realization of this goal. To fulfill the mandate of the undergraduate medical curriculum which is to produce a clinician, who understands and is able to provide preventive, promotive, curative, palliative and holistic care to his patients, the curriculum must enunciate clearly the competencies the student must be imparted and must have learnt, with clearly defined teaching-learning strategies and effective methods of assessment. The student should be trained to effectively communicate with patients and their relatives in a manner respectful of the patient's preferences, values, beliefs, confidentiality and privacy and to this purpose, a book on Attitude, Ethics & Communication was prepared by the Medical Council of India; the teaching faculty of medical colleges have been receiving training on this module since 2015.

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Competency based Medical Education provides an effective outcome-based strategy where various domains of teaching including teaching learning methods and assessment form the framework of competencies. Keeping this objective as the core ingredient, the Medical Council of India with the help of panel of experts drawn from across the country, laid the basic framework for the revised undergraduate medical curriculum. Over the past four years, a group of highly committed medical professionals working as Members of the MCI Reconciliation Board developed this information into a document incorporating appropriate teaching-learning strategies, tools and techniques of teaching, and modes of assessment which have culminated in the current competency based undergraduate curriculum. We understand that maximum efforts were made to encourage integrated teaching between traditional subject areas using a problem-based learning approach starting with clinical or community cases and exploring the relevance of various preclinical disciplines in both the understanding and resolution of the problem. All efforts have been made to de-emphasize compartmentalisation of disciplines so as to achieve both horizontal and vertical integration in different phases. We are proud of their work accomplishment and congratulate them in the onerous task accomplished.

It gives us great satisfaction to state that the **'competency based undergraduate curriculum'** that has been prepared by the Medical Council of India would definitely serve the cause of medical education and in creating a competent Indian Medical Graduate to serve the community.

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How to cite this document: Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 1; pg --- (give page nos.)

Contents
Vol. I

Sl. No.	Subject	Legend	Page No.
(i)	Preamble		11
(ii)	How to use the Manual		14
(iii)	Definitions used in the Manual		37
	Competency based Undergraduate Curriculum in Pre-clinical and Para-clinical subjects		
1.	Human Anatomy	AN	41
2.	Physiology	PY	92
3.	Biochemistry	BI	119
4.	Pharmacology	PH	136
5.	Pathology	PA	160
6.	Microbiology	MI	205
7.	Forensic Medicine & Toxicology	FM	228
(iv)	List of contributing subject experts		252

Contents
Vol. II

Sl. No.	Subject	Legend	Page No.
(i)	Preamble		11
(ii)	How to use the Manual		14
(iii)	Definitions used in the Manual		37
	Competency based Undergraduate Curriculum in Medicine and Allied subjects		
1.	Community Medicine	CM	41
2.	General Medicine	IM	60
3.	Respiratory Medicine	CT	143
4.	Pediatrics	PE	150
5.	Psychiatry	PS	203
6.	Dermatology, Venereology & Leprosy	DR	219
7.	Physical Medicine & Rehabilitation	PM	229
(iv)	List of contributing subject experts		235

Contents
Vol. III

Sl. No.	Subject	Legend	Page No.
(i)	Preamble		11
(ii)	How to use the Manual		14
(iii)	Definitions used in the Manual		37
	Competency based Undergraduate Curriculum in Surgery and Allied subjects		
1.	General Surgery	SU	41
2.	Ophthalmology	OP	79
3.	Otorhinolaryngology	EN	89
4.	Obstetrics & Gynaecology	OG	102
5.	Orthopedics	OR	130
6.	Anesthesiology	AS	145
7.	Radiodiagnosis	RD	154
8.	Radiotherapy	RT	160
9.	Dentistry	DE	163
(iv)	List of contributing subject experts		166

COMPETENCY BASED UNDERGRADUATE CURRICULUM
FOR
THE INDIAN MEDICAL GRADUATE

Preamble

The new Graduate Medical Education Regulations attempts to stand on the shoulder of the contributions and the efforts of resource persons, teachers and students (past and present). It intends to take the learner to provide health care to the evolving needs of the nation and the world.

More than twenty years have passed since the existing Regulations on Graduate Medical Education, 1997 was notified, necessitating a relook at all aspects of the various components in the existing regulations and adapt them to the changing demography, socio-economic context, perceptions, values and expectations of stakeholders. Emerging health care issues particularly in the context of emerging diseases, impact of advances in science and technology and shorter distances on diseases and their management also need consideration. The strong and forward looking fundamentals enshrined in the Regulations on Graduate Medical Education, 1997 has made this job easier. A comparison between the 1997 Regulations and proposed Graduate Medical Education Regulations, 2018 will reveal that the 2018 Regulations have evolved from several key principles enshrined in the 1997 Regulations.

The thrust in the new regulations is continuation and evolution of thought in medical education making it more learner-centric, patient-centric, gender-sensitive, outcome -oriented and environment appropriate. The result is an outcome driven curriculum which conforms to global trends. Emphasis is made on alignment and integration of subjects both horizontally and vertically while respecting the strengths and necessity of subject-based instruction and assessment. This has necessitated a deviation from using “broad competencies”; instead, the reports have written end of phase subject (sub) competencies. These “sub-competencies” can be mapped to the global competencies in the Graduate Medical Education Regulations.

A significant attempt has been made in the outcome driven undergraduate curriculum to provide the orientation and the skills necessary for life-long learning to enable proper care of the patient. In particular, the curriculum provides for early clinical exposure, electives and longitudinal care. Skill acquisition is an indispensable component of the learning process in medicine. The curriculum reinforces this aspect by necessitating certification of certain essential skills. The experts and the writing group have factored in patient availability, access, consent, number of students in a class etc. in suggesting skill acquisition and assessment methods; use of skills labs, simulated and guided environments are encouraged. In the pre-internship years,- the highest level of skill acquisition is a show how (SH) in a simulated or guided environment; few skills require independent performance and certification - these are marked with P (for performance). Opportunity to 'perform' these skills will be available during internship.

The importance of ethical values, responsiveness to the needs of the patient and acquisition of communication skills is underscored by providing dedicated curriculum time in the form of a longitudinal program based on Attitude, Ethics and Communication (AETCOM) competencies. Great emphasis has been placed on collaborative and inter-disciplinary teamwork, professionalism, altruism and respect in professional relationships with due sensitivity to differences in thought, social and economic position and gender.

In addition to the above, an attempt has been made to allow students from diverse educational streams and backgrounds to transition appropriately through a Foundation Course. Dedicated time has been allotted for self directed learning and co-curricular activities.

Formative and internal assessments have been streamlined to achieve the objectives of the curriculum. Minor tweaks to the summative assessment have been made to reflect evolving thought and regulatory requirements. Curricular governance and support have been strengthened, increasing the involvement of Curriculum Committee and Medical Education Departments/Units.

The curriculum document in conjunction with the new Graduate Medical Education Regulations (GMR), when notified, must be seen as a "living document" that should evolve as stakeholder requirements and aspirations change. We hope that the current GMR does just that. The Medical Council of India is

grateful to all the teachers, subject experts, process experts, patients, students and trainees who have contributed through invaluable inputs, intellectual feedbacks and valuable time spent to make this possible. This document would not have been possible without the dedicated and unstinting intellectual, mental and time-consuming efforts of the members of the Reconciliation Board of the Council and the Academic Cell of MCI.

How to use the Manual

This Manual is intended for curriculum planners in an institution to design learning and assessment experiences for the MBBS student. Contents created by subject experts have been curated to provide guidance for the curriculum planners, leaders and teachers in medical schools. They must be used with reference to and in the context of the Regulations.

Section 1

Competencies for the Indian Medical Graduate

Section 1 - provides the global competencies extracted from the Graduate Medical Education Regulations, 2018. The global competencies identified as defining the roles of the **Indian Medical Graduate** are the broad competencies that the learner has to aspire to achieve; teachers and curriculum planners must ensure that the learning experiences are aligned to this Manual.

Extract from the Graduate Medical Education Regulations, 2018

2. Objectives of the Indian Graduate Medical Training Programme

The undergraduate medical education program is designed with a goal to create an "Indian Medical Graduate" (IMG) possessing requisite knowledge, skills, attitudes, values and responsiveness, so that she or he may function appropriately and effectively as a physician of first contact of the community while being globally relevant. To achieve this, the following national and institutional goals for the learner of the Indian Medical Graduate training program are hereby prescribed:-

2.1. National Goals

At the end of undergraduate program, the Indian Medical Graduate should be able to:

(a) recognize “health for all” as a national goal and health right of all citizens and by undergoing training for medical profession fulfill his/her social obligations towards realization of this goal.

(b) learn every aspect of National policies on health and devote herself/himself to its practical implementation.

(c) achieve competence in practice of holistic medicine, encompassing promotive, preventive, curative and rehabilitative aspects of common diseases.

(d) develop scientific temper, acquire educational experience for proficiency in profession and promote healthy living.

(e) become exemplary citizen by observance of medical ethics and fulfilling social and professional obligations, so as to respond to national aspirations.

2.2. Institutional Goals

In consonance with the national goals, each medical institution should evolve institutional goals to define the kind of trained manpower (or professionals) they intend to produce. The Indian Medical Graduates coming out of a medical institute should:

(a) be competent in diagnosis and management of common health problems of the individual and the community, commensurate with his/her position as a member of the health team at the primary, secondary or tertiary levels, using his/her clinical skills based on history, physical examination and relevant investigations.

(b) be competent to practice preventive, promotive, curative and rehabilitative medicine in respect to the commonly encountered health problems.

(c) appreciate rationale for different therapeutic modalities, be familiar with the administration of the "essential drugs" and their common side effects.

(d) be able to appreciate the socio-psychological, cultural, economic and environmental factors affecting health and develop humane attitude towards the patients in discharging one's professional responsibilities.

(e) possess the attitude for continued self learning and to seek further expertise or to pursue research in any chosen area of medicine, action research and documentation skills.

(f) be familiar with the basic factors which are essential for the implementation of the National Health Programs including practical aspects of the following:

(i) Family Welfare and Maternal and Child Health (MCH);

(ii) Sanitation and water supply;

(iii) Prevention and control of communicable and non-communicable diseases;

(iv) Immunization;

(v) Health Education;

(vi) Indian Public Health Standards (IPHS) at various level of service delivery;

(vii) Bio-medical waste disposal; and

(viii) Organizational and or institutional arrangements.

(g) acquire basic management skills in the area of human resources, materials and resource management related to health care delivery, General and hospital management, principal inventory skills and counseling.

(h) be able to identify community health problems and learn to work to resolve these by designing, instituting corrective steps and evaluating outcome of such measures.

(i) be able to work as a leading partner in health care teams and acquire proficiency in communication skills.

(j) be competent to work in a variety of health care settings.

(k) have personal characteristics and attitudes required for professional life including personal integrity, sense of responsibility and dependability and ability to relate to or show concern for other individuals.

All efforts must be made to equip the medical graduate to acquire the skills as detailed in Table 11 Certifiable procedural skills – A Comprehensive list of skills recommended as desirable for Bachelor of Medicine and Bachelor of Surgery (MBBS) – Indian Medical Graduate, as given in the Graduate Medical Education Regulations, 2018

2. 3. Goals for the Learner

In order to fulfil this goal, the Indian Medical Graduate must be able to function in the following roles appropriately and effectively:-

2.3.1. Clinician who understands and provides preventive, promotive, curative, palliative and holistic care with compassion.

2.3.2. Leader and member of the health care team and system with capabilities to collect, analyze, synthesize and communicate health data appropriately.

2.3.3. Communicator with patients, families, colleagues and community.

2.3.4. Lifelong learner committed to continuous improvement of skills and knowledge.

2.3.5. Professional, who is committed to excellence, is ethical, responsive and accountable to patients, community and profession.

3. Competency Based Training Programme of the Indian Medical Graduate

Competency based learning would include designing and implementing medical education curriculum that focuses on the desired and observable ability in real life situations. In order to effectively fulfil the roles as listed in clause 2, the Indian Medical Graduate would have obtained the following set of competencies at the time of graduation:

3.1. Clinician, who understands and provides preventive, promotive, curative, palliative and holistic care with compassion

3.1.1 Demonstrate knowledge of normal human structure, function and development from a molecular, cellular, biologic, clinical, behavioral and social perspective.

3.1.2. Demonstrate knowledge of abnormal human structure, function and development from a molecular, cellular, biological, clinical, behavioural and social perspective.

3.1.3 Demonstrate knowledge of medico-legal, societal, ethical and humanitarian principles that influence health care.

3.1.4 Demonstrate knowledge of national and regional health care policies including the National Health Mission that incorporates National Rural Health Mission (NRHM) and National Urban Health Mission (NUHM), frameworks, economics and systems that influence health promotion, health care delivery, disease prevention, effectiveness, responsiveness, quality and patient safety.

3.1.5. Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is complete and relevant to disease identification, disease prevention and health promotion.

3.1.6. Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is contextual to gender, age, vulnerability, social and economic status, patient preferences, beliefs and values.

3.1.7 Demonstrate ability to perform a physical examination that is complete and relevant to disease identification, disease prevention and health promotion.

3.1.8 Demonstrate ability to perform a physical examination that is contextual to gender, social and economic status, patient preferences and values.

3.1.9 Demonstrate effective clinical problem solving, judgment and ability to interpret and integrate available data in order to address patient problems, generate differential diagnoses and develop individualized management plans that include preventive, promotive and therapeutic goals.

3.1.10 Maintain accurate, clear and appropriate record of the patient in conformation with legal and administrative frameworks.

3.1.11 Demonstrate ability to choose the appropriate diagnostic tests and interpret these tests based on scientific validity, cost effectiveness and clinical context.

3.1.12 Demonstrate ability to prescribe and safely administer appropriate therapies including nutritional interventions, pharmacotherapy and interventions based on the principles of rational drug therapy, scientific validity, evidence and cost that conform to established national and regional health programmes and policies for the following:

i) Disease prevention,

ii) Health promotion and cure,

iii) Pain and distress alleviation, and

iv) Rehabilitation and palliation.

3.1.13 Demonstrate ability to provide a continuum of care at the primary and/or secondary level that addresses chronicity, mental and physical disability.

3.1.14 Demonstrate ability to appropriately identify and refer patients who may require specialized or advanced tertiary care.

3.1.15 Demonstrate familiarity with basic, clinical and translational research as it applies to the care of the patient.

3*.2.* ***Leader and member of the health care team and system***

3.2.1 Work effectively and appropriately with colleagues in an inter-professional health care team respecting diversity of roles, responsibilities and competencies of other professionals.

3.2.2 Recognize and function effectively, responsibly and appropriately as a health care team leader in primary and secondary health care settings.

3.2.3 Educate and motivate other members of the team and work in a collaborative and collegial fashion that will help maximize the health care delivery potential of the team.

3.2.4 Access and utilize components of the health care system and health delivery in a manner that is appropriate, cost effective, fair and in compliance with the national health care priorities and policies, as well as be able to collect, analyze and utilize health data.

3.2.5 Participate appropriately and effectively in measures that will advance quality of health care and patient safety within the health care system.

3.2.6 Recognize and advocate health promotion, disease prevention and health care quality improvement through prevention and early recognition: in a) life style diseases and b) cancer, in collaboration with other members of the health care team.

3.3. ***Communicator with patients, families, colleagues and community***

3.3.1 Demonstrate ability to communicate adequately, sensitively, effectively and respectfully with patients in a language that the patient understands and in a manner that will improve patient satisfaction and health care outcomes.

3.3.2 Demonstrate ability to establish professional relationships with patients and families that are positive, understanding, humane, ethical, empathetic, and trustworthy.

3.3.3 Demonstrate ability to communicate with patients in a manner respectful of patient’s preferences, values, prior experience, beliefs, confidentiality and privacy.

3.3.4 Demonstrate ability to communicate with patients, colleagues and families in amanner that encourages participation and shared decision-making.

3.4. Lifelong learner committed to continuous improvement of skills and knowledge

3.4.1. Demonstrate ability to perform an objective self-assessment of knowledge and skills, continue learning, refine existing skills and acquire new skills.

3.4.2. Demonstrate ability to apply newly gained knowledge or skills to the care of the patient.

3.4.3. Demonstrate ability to introspect and utilize experiences, to enhance personal and professional growth and learning.

3.4.4. Demonstrate ability to search (including through electronic means), and critically revaluate the medical literature and apply the information in the care of the patient.

3.4.5. Be able to identify and select an appropriate career pathway that is professionally rewarding and personally fulfilling.

3.5. *Professional who is committed to excellence, is ethical, responsive and accountable to patients, community and the profession*

3.5.1. Practice selflessness, integrity, responsibility, accountability and respect.

3.5.2. Respect and maintain professional boundaries between patients, colleagues and society.

3.5.3. Demonstrate ability to recognize and manage ethical and professional conflicts.

3.5.4. Abide by prescribed ethical and legal codes of conduct and practice.

3.5.5. Demonstrate a commitment to the growth of the medical profession as a whole.

Section 2

Subject-wise outcomes

Section 2 contains subject-wise outcomes so called “sub-competencies” that must be achieved at the end of instruction in that subject. These are organised in tables and have two parts. The core subject outcomes are in first part. The second part in the same document (titled Integration) contains outcomes/competencies in other subjects which have been identified by experts in those subjects as requiring alignment or integration with the core subject.

Outcomes (competencies) in each subject are grouped according to topics number-wise. It is important to review the individual outcomes (competencies) in the light of the topic outcomes as a whole. For each competency outlined - the learning domains (Knowledge, Skill, Attitude, Communication) are identified. The expected level of achievement in that subject is identified as – [knows (K), knows how (KH), shows how (SH), perform (P)]. As a rule, ‘perform’ indicates independent performance without supervision and is required rarely in the pre-internship period. The outcome is a core (Y - must achieve) or a non-core (N - desirable) outcome. Suggested learning and assessment methods (these are suggestions) and explanation of the terms used are given under the section “definitions used in this document”. The suggested number of times a skill must be performed independently for certification in the learner’s log book is also given. Last two columns indicate subjects within the same phase and other phases with which the topic can be taught - together - aligned (temporal coordination), shared, correlated or nested.

The number of topics and competencies in each subject are given below:

Topics & outcomes in Pre-clinical & Para-clinical subjects

Sr. No.	Subjects	Number of topics	Number of outcomes
1.	**Human Anatomy**	82	409
2.	**Physiology**	11	137
3.	**Biochemistry**	11	89
4.	**Pharmacology**	05	85
5.	**Pathology**	36	182
6.	**Microbiology**	08	54
7.	**Forensic Medicine & Toxicology**	14	162
	Total	**167**	**1118**

Topics & outcomes in Medicine and Allied subjects

Sr. No.	Subjects	Number of topics	Number of outcomes
1.	**Community Medicine**	20	107
2.	**General Medicine**	26	506
3.	**Respiratory Medicine**	02	47
4.	**Pediatrics**	35	406
5.	**Psychiatry**	19	117
6.	**Dermatology, Venereology & Leprosy**	18	73
7.	**Physical Medicine & Rehabilitation**	09	43
	Total	**129**	**1299**

Topics & outcomes in Surgery and Allied subjects

Sr. No.	Subjects	Number of topics	Number of outcomes
1.	**General Surgery**	30	133
2.	**Ophthalmology**	09	60
3.	**Otorhinolaryngology**	04	76
4.	**Obstetrics & Gynaecology**	38	126
5.	**Orthopedics**	14	39
6.	**Anesthesiology**	10	46
7.	**Radiodiagnosis**	01	13
8.	**Radiotherapy**	05	16
9.	**Dentistry**	05	23
	Total	**116**	**532**

Section 3

Sample topics used for alignment & integration

Section 3 contains a sample selection of topics that run across the phases which can be used for alignment and integration. These are suggestions and institutions can select their own set of topics which can run across phases.

It is important to design the curriculum with a view to ensure with several broad outcomes in mind: a) achievement of the broad competencies by the learner at the end of the MBBS program, b) retain the subject - wise character of learning and assessment and ensure that phase-wise subject outcomes are met and assessed, c) teaching topics that are similar together thereby reducing redundancy and allowing the learner to integrate the concept as the most important step in integration (alignment or temporal coordination) (see document on integration), and d) align learning and assessment experiences to the outcome and the level of achievement specified.

Understanding the competencies table

Understanding the competencies table

A	B	C	D	E	F	G	H	I	J
No.	**Competencies**	**Domain**	**K/KH/SH/P**	**Core**	**Suggested Teaching Learning Method**	**Suggested Assessment method**	**No. required to certify (P)**	**Vertical Integration**	**Horizontal Integration**
Physiology									
Summary **Name of Topic: General Physiology** **Number of Competencies: (08)**									
PY1.1	Describe the structure and functions of a	K	KH	Y	Lectures, Small group discussion	Written/Viva			Biochemistry
IM25.4	Elict *document* and present a medical history that helps delineate the	S	SH	Y	Bed Side clinic, DOAP	Skill assessment		Community Medicine	

Unique number of the competency. First two alphabets represent the subject (see list); number following alphabet reflects topic number, following period is a running number.

Description of competency

Identifies the domain or domains addressed
K - Knowledge
S - Skill
A - Attitude
C - Communication

Identifies the level of competency required based on the Miller's pyramid
K - Knows
KH - Knows How
S - Skill
SH - Show How
P - Perform independently

Identifies if the competency is core or desirable.
Y indicates Core; N-non-core

Identifies the suggested learning method.
DOAP - **D**emonstrate (by Student) Observe, Assist Perform)

Identifies the suggested assessment method
Skill assessment - Clinics, Skills lab, Practicals etc.

no of times a skill needs to be done independently to be certified for independent performance; Rarely used in UG

Subject (s) in other phases with which the competency can be vertically integrated to increase relevance or improve basic understanding

Subject (s) in the same phase with which the competency can be horizontally integrated or aligned to allow a more wholesome understanding

***Numbers given are for illustrative purposes only and should not be compared with the same in curriculum documents**

Deriving learning objectives from competencies

Deriving learning objectives from competencies

K	Knows	A knowledge attribute – Usually enumerates or describes
KH	Knows how	A higher level of knowledge – is able to discuss or analyse
S	Shows	A skill attribute: is able to identify or demonstrate the steps
SH	Shows how	A skill attribute: is able to interpret / demonstrate a complex procedure requiring thought, knowledge and behaviour
P	Performs (under supervision or independently)	Mastery for the level of competence - When done independently under supervision a pre-specified number of times - certification or capacity to perform independently results

Competency: An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

PA42.3*	**Identify the etiology of meningitis based on given CSF parameters**	**K/S**	**SH**	**Y**

PA42.1*	At the end of the session the **phase II student** must be able to enumerate the most common causes of meningitis correctly
PA42.2*	At the end of the session the **phase II student** must be able to enumerate the components of CSF analysis correctly
PA42.3*	At the end of the session the **phase II student** must be able to **describe** the CSF features for a given etiology of meningitis **accurately**
PA42.4*	At the end of the session the **phase II student** must be able to identify the aetiology of meningitis correctly from a **given set of CSF parameters**

Audience - who will do the behavior

Behavior - What should the learner be able to do?

Condition - Under what conditions should the learner be able to do it?

Degree – How well must it be done

Objective: Statement of what a learner should be able to do at the end of a specific learning experience
***Numbers given are for illustrative purposes only and should not be compared with the same in curriculum documents**

Deriving learning methods from competencies

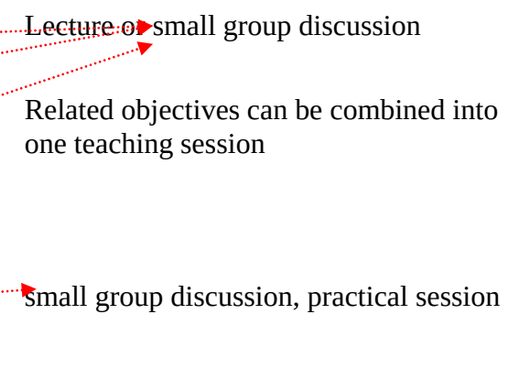
Deriving learning methods from competencies

Competency: An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

PA42.3*	**Identify** the etiology of meningitis based on given CSF parameters	K/S	SH	Y

Objective: Statement of what a learner should be able to do at the end of a specific learning experience

PA42.1*	At the end of the session the **Phase II student** must be able to enumerate the most common causes of meningitis **correctly**
PA42.2*	At the end of the session the **Phase II student** must be able to enumerate the components of a CSF analysis correctly
PA42.3*	At the end of the session the **Phase II student** must be able to **describe** the CSF features for a given etiologic of meningitis **accurately**
PA42.4*	At the end of the session the **Phase II student** must the able to identify the aetiology of meningitis correctly from a **given set of CSF parameters**



*Numbers given are for illustrative purposes only and should not be compared with the same in curriculum documents

Deriving assessment methods from competencies

Deriving assessment methods from competencies-1

Competency: An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

PA42.3*	**Identify** the etiology of meningitis based on given CSF parameters	K/S	SH	Y

Objective: Statement of what a learner should be able to do at the end of a specific learning experience

PA42.1*	At the end of the session the Phase II student must be able to enumerate the most common causes of meningitis correctly	Short note or part of structured essay: Enumerate 5 causes of meningitis based on their prevalence in India
PA42.2*	At the end of the session the **Phase II student** must be able to enumerate the components of a CSF analysis correctly	Short note or part of structured essay: Enumerate the components tested in a CSF analysis
PA42.3*	At the end of the session the **Phase II student** must be able to **describe** the CSF features for a given aetiology of meningitis a**ccurately**	Short note or part of structured essay: Describe the CSF findings that are characteristic of tuberculous meningitis
PA42.4*	At the end of the session the **Phase II student** must the able to identify the aetiology of meningitis correctly from a **given set of CSF parameters**	Short note / part of the structured essay/ Skill station/ Viva voce Review the CSF findings in the following patient and identify (write or vocalise) the most likely etiology

*** Numbers given are for illustrative purposes only and should not be compared with numbers in the curriculum document**

Deriving assessment methods from competencies-2

Competency: An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

MI2.4*	List the common microbial agents causing anemia. Describe the morphology, mode of infection and discuss the pathogenesis, clinical course, diagnosis and prevention and treatment of the common microbial agents causing Anemia.	K	KH	Y	Didactic Small group discussion	Written/ Viva voce	Medicine	Pathology

Objective: Statement of what a learner should be able to do at the end of a specific learning experience

MI2.1*	Enumerate the common microbial agents causing anaemia
MI2.2*	Describe the morphology of agent (1,2 etc)
MI2.3*	Describe the mode of infection of agent in humans
MI2.4*	Discuss the pathogenesis of anemia caused by agent
MI2.5*	Describe the clinical course of infection by agent
MI2.6*	Enumerate the diagnostic tests to identify the aetiology of agent as a cause of anemia
MI2.7*	Discuss the methods to prevent infection by agent
MI2.8*	Describe the treatment of infection by agent

Integrate concept - not necessarily teachers
Plan session with teachers of both subjects -teachers from both subjects usually not needed. Ensure redundancy and duplication by reviewing both subjects

Horizontally aligned and integrated with pathology

Vertically integrated with General Medicine

Integrate concept - not necessarily teachers Plan session with teachers from both phases. Make a decision on how much of the information needs to be brought down to this phase to make it relevant. Consider how a competency can ascend over phases: for eg. - can be at a KH -(know how) in phase II but becomes SH in phase III. For vertical integration with clinical subjects, use of a case to link the concept (a well written paper, case is sufficient). Using teachers from both phases is rarely required

The concept of integration

Concept of integration used in the Manual

Integration is a learning experience that allows the learner to perceive relationships from blocks of knowledge and develop a unified view of its basis and its application. The GMR 2018 applies these principles to the extent that will retain the strengths of silo - based education and assessment while providing experiences that will allow learners to integrate concepts.

Keeping this in mind, the Regulations recommend temporal coordination as described by Harden (called alignment in this document) as the major method to be followed allowing similar topics in different subjects to be thought separately but during the same time frame (Figure 1a).

In a small proportion - not to exceed 20% of the total curriculum an attempt can be made to Share (Figure 1b) topics or Correlate (Figure 1c) topics by using an integration session. The integration session most preferred will be a case based discussion in an appropriate format ensuring that elements in the same phase (horizontal) and from other phases are addressed. Care must be taken to ensure that achievement phase - based objectives are given primacy - the integrative elements from other phases are used only to provide adequate recall and understand the clinical application of concepts. It must be emphasized that integration does not necessarily require multiple teachers in each class. Experts from each phase and subject may be involved in the lesson planning but not it in its delivery unless deemed necessary.

As much as possible the necessary correlates from other phases must also be introduced while discussing a topic in a given subject - Nesting (Figure 1d) (Harden). Topics that cannot be aligned and integrated must be provided adequate time in the curriculum throughout the year.

Assessment will continue to be subject based. However, efforts must be made to ensure that phase appropriate correlates are tested to determine if the learner has internalized and integrated the concept and its application.

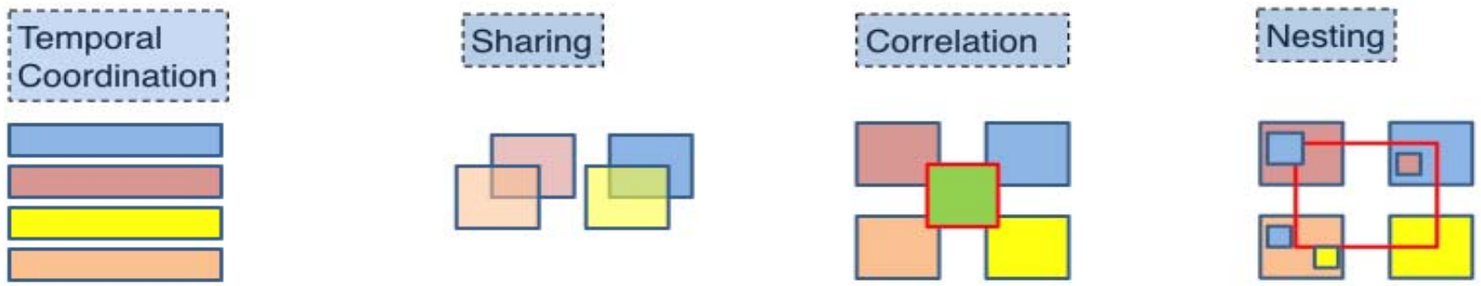


Figure 1 : Integration concepts framed in the GMR. Coloured boxes represent subjects. 1 a. Temporal coordination: The timetable is adjusted so that topics within the subjects or disciplines which are related, are scheduled at the same time. b. Sharing: Two disciplines may agree to plan and jointly implement a teaching program c. Correlation: the emphasis remains on disciplines or subjects with subject-based courses taking up most of the curriculum time. Within this framework, an integrated teaching session or course is introduced in addition to the subject-based teaching (green box with red border) d. Nesting: the teacher targets, within a subject-based course, skills relating to other subjects. Adapted from Harden R Med Edu 2000. 34; 551

Definitions used in the Manual

1. **Goal:** A projected state of affairs that a person or system plans to achieve.

   In other words: Where do you want to go? or What do you want to become?

2. **Competency:** The habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the individual and community being served.

   In other words: What should you have? or What should have changed?

3. **Objective:** Statement of what a learner should be able to do at the end of a specific learning experience.

   In other words: What the Indian Medical Graduate should know, do, or behave.

Action Verbs used in this manual

Knowledge	**Skill**	**Attitude/communicate**
Enumerate	Identify	Counsel
List	Demonstrate	Inform
Describe	Perform under supervision	Demonstrate understanding of
Discuss	Perform independently	
Differentiate	Document	
Define	Present	
Classify	Record	
Choose	Interpret	
Elicit		
Report		

Note:

1. Specified essential competencies only will be required to be performed independently at the end of the final year MBBS.
2. The word ‘perform’ or ‘do’ is used ONLY if the task has to be done on patients or in laboratory practical in the pre/para- clinical phases.
3. Most tasks that require performance during undergraduate years will be performed under supervision.
4. If a certification to perform independently has been done, then the number of times the task has to be performed under supervision will be indicated in the last column.

Explanation of terms used in this manual

Lecture	Any instructional large group method including traditional lecture and interactive lecture
Small group discussion	Any instructional method involving small groups of students in an appropriate learning context
DOAP (Demonstration-Observation - Assistance - Performance)	A practical session that allows the student to observe a demonstration, assist the performer, perform in a simulated environment, perform under supervision or perform independently
Skill assessment	A session that assesses the skill of the student including those in the practical laboratory, skills lab, skills station that uses mannequins/ paper case/simulated patients/real patients as the context demands
Core	A competency that is necessary in order to complete the requirements of the subject (traditional must know)
Non-Core	A competency that is optional in order to complete the requirements of the subject (traditional nice (good) to know/ desirable to know)
National Guidelines	Health programs as relevant to the competency that are part of the National Health Program

Domains of learning

K	Knowledge
S	Skill
A	Attitude
C	Communication

Levels of competency

K	Knows	A knowledge attribute - Usually enumerates or describes
KH	Knows how	A higher level of knowledge - is able to discuss or analyze
S	Shows	A skill attribute: is able to identify or demonstrate the steps
SH	Shows how	A skill attribute: is able to interpret/ demonstrate a complex procedure requiring thought, knowledge and behavior
P	Performs (under supervision or independently)	Mastery for the level of competence - When done independently under supervision a pre-specified number of times - certification or capacity to perform independently results

Note:

In the table of competency - the highest level of competency acquired is specified and implies that the lower levels have been acquired already. Therefore, when a student is able to SH - Show how - an informed consent is obtained - it is presumed that the preceding steps - the knowledge, the analytical skills, the skill of communicating have all been obtained.

It may also be noted that attainment of the highest level of competency may be obtained through steps spread over several subjects or phases and not necessarily in the subject or the phase in which the competency has been identified.

Volume I

Competency based Undergraduate Curriculum

in

Pre-clinical and Para-clinical subjects

HUMAN ANATOMY (CODE: AN)

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
Human Anatomy									
Topic: Anatomical terminology		**Number of competencies: (2)**				**Number of procedures for certification: (NIL)**			
AN1.1	Demonstrate normal anatomical position, various planes, relation, comparison, laterality & movement in our body	K/S	SH	Y	Lecture, DOAP session	Written/ Viva voce/skills assessment			
AN1.2	Describe composition of bone and bone marrow	K	KH	Y	Lecture	Written/ Viva voce			
Topic: General features of bones & Joints		**Number of competencies: (6)**				**Number of procedures for certification: (NIL)**			
AN2.1	Describe parts, blood and nerve supply of a long bone	K	KH	Y	Lecture, DOAP session	Written/ Viva voce			
AN2.2	Enumerate laws of ossification	K	KH	N	Lecture	Written			
AN2.3	Enumerate special features of a sesamoid bone	K	KH	N	Lecture	Written			
AN2.4	Describe various types of cartilage with its structure & distribution in body	K	KH	Y	Lecture	Written/ Viva voce		Orthopedics	
AN2.5	Describe various joints with subtypes and examples	K	KH	Y	Lecture	Written/ Viva voce		Orthopedics	
AN2.6	Explain the concept of nerve supply of joints & Hilton's law	K	KH	Y	Lecture	Written/ Viva voce			
Topic: General features of Muscle		**Number of competencies: (3)**				**Number of procedures for certification: (NIL)**			
AN3.1	Classify muscle tissue according to structure & action	K	KH	Y	Lecture	Written/ Viva voce			Physiology
AN3.2	Enumerate parts of skeletal muscle and differentiate between tendons and aponeuroses with examples	K	KH	Y	Lecture	Written/ Viva voce			
AN3.3	Explain Shunt and spurt muscles	K	KH	N	Lecture	Written			
Topic: General features of skin and fascia		**Number of competencies: (5)**				**Number of procedures for certification: (NIL)**			
AN4.1	Describe different types of skin & dermatomes in body	K	KH	N	Lecture, DOAP session	Written			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN4.2	Describe structure & function of skin with its appendages	K	KH	Y	Lecture, DOAP session	Written/ Viva voce		Dermatology, Venereology & Leprosy	
AN4.3	Describe superficial fascia along with fat distribution in body	K	KH	Y	Lecture, DOAP session	Written/ Viva voce			
AN4.4	Describe modifications of deep fascia with its functions	K	KH	Y	Lecture, DOAP session	Written/ Viva voce		Dermatology, Venereology & Leprosy	
AN4.5	Explain principles of skin incisions	K	KH	N	Lecture	Written		Dermatology, Venereology & Leprosy	
Topic: General features of the cardiovascular system		**Number of competencies: (8)**				**Number of procedures for certification: (NIL)**			
AN5.1	Differentiate between blood vascular and lymphatic system	K	KH	Y	Lecture	Written/ Viva voce			Physiology
AN5.2	Differentiate between pulmonary and systemic circulation	K	KH	Y	Lecture	Written/ Viva voce			Physiology
AN5.3	List general differences between arteries & veins	K	KH	Y	Lecture	Written/ Viva voce			
AN5.4	Explain functional difference between elastic, muscular arteries and arterioles	K	KH	Y	Lecture	Written/ Viva voce			
AN5.5	Describe portal system giving examples	K	KH	Y	Lecture	Written/ Viva voce			
AN5.6	Describe the concept of anastomoses and collateral circulation with significance of end-arteries	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	Physiology
AN5.7	Explain function of meta-arterioles, precapillary sphincters, arterio-venous anastomoses	K	KH	N	Lecture	Written			Physiology
AN5.8	Define thrombosis, infarction & aneurysm	K	KH	N	Lecture	Written		Pathology	Physiology
Topic: General Features of lymphatic system		**Number of competencies: (3)**				**Number of procedures for certification: (NIL)**			
AN6.1	List the components and functions of the lymphatic system	K	KH	N	Lecture	Written			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN6.2	Describe structure of lymph capillaries & mechanism of lymph circulation	K	KH	N	Lecture	Written			
AN6.3	Explain the concept of lymphoedema and spread of tumors via lymphatics and venous system	K	KH	N	Lecture	Written		General Surgery	
Topic: Introduction to the nervous system		**Number of competencies: (8)**				**Number of procedures for certification: (NIL)**			
AN7.1	Describe general plan of nervous system with components of central, peripheral & autonomic nervous systems	K	KH	Y	Lecture	Written			
AN7.2	List components of nervous tissue and their functions	K	KH	Y	Lecture	Written/ Viva voce			Physiology
AN7.3	Describe parts of a neuron and classify them based on number of neurites, size & function	K	KH	Y	Lecture	Written/ Viva voce			Physiology
AN7.4	Describe structure of a typical spinal nerve	K	KH	Y	Lecture	Written/ Viva voce			
AN7.5	Describe principles of sensory and motor innervation of muscles	K	KH	N	Lecture	Written		General Medicine	Physiology
AN7.6	Describe concept of loss of innervation of a muscle with its applied anatomy	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	
AN7.7	Describe various type of synapse	K	KH	N	Lecture	Written			Physiology
AN7.8	Describe differences between sympathetic and spinal ganglia	K	KH	N	Lecture	Written			
Topic: Features of individual bones (Upper Limb)		**Number of competencies: (6)**				**Number of procedures for certification: (NIL)**			
AN8.1	Identify the given bone, its side, important features & keep it in anatomical position	K/S	SH	Y	DOAP session	Viva voce/ Practicals/ OSPE			
AN8.2	Identify & describe joints formed by the given bone	K/S	SH	Y	Lecture, DOAP session	Viva voce			
AN8.3	Enumerate peculiarities of clavicle	K	KH	Y	Lecture, DOAP session	Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN8.4	Demonstrate important muscle attachment on the given bone	K/S	SH	Y	Practical DOAP session, Small group teaching	Viva voce Practicals		Orthopedics	
AN8.5	Identify and name various bones in articulated hand, Specify the parts of metacarpals and phalanges and enumerate the peculiarities of pisiform	K/S	SH	Y	Practical,F91 DOAP session, Small group teaching	Viva voce Practicals			
AN8.6	Describe scaphoid fracture and explain the anatomical basis of avascular necrosis	K	KH	N	DOAP session	Viva voce		Orthopedics	
Topic: Pectoral region		**Number of competencies: (3)**				**Number of procedures for certification: (NIL)**			
AN9.1	Describe attachment, nerve supply & action of pectoralis major and pectoralis minor	K	KH	Y	Lecture, Practical	Written			
AN9.2	Breast: Describe the location, extent, deep relations, structure, age changes, blood supply, lymphatic drainage, microanatomy and applied anatomy of breast	K	KH	Y	Practical, Lecture	Written/ Viva voce		General Surgery	
AN9.3	Describe development of breast	K	KH	N	Lecture	Written			
Topic: Axilla, Shoulder and Scapular region		**Number of competencies: (13)**				**Number of procedures for certification: (NIL)**			
AN10.1	Identify & describe boundaries and contents of axilla	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN10.2	Identify, describe and demonstrate the origin, extent, course, parts, relations and branches of axillary artery & tributaries of vein	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN10.3	Describe, identify and demonstrate formation, branches, relations, area of supply of branches, course and relations of terminal branches of brachial plexus	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN10.4	Describe the anatomical groups of axillary lymph nodes and specify their areas of drainage	K	KH	Y	Practical, Lecture	Written/ Viva voce		General Surgery	
AN10.5	Explain variations in formation of brachial plexus	K	KH	Y	Practical, Lecture	Written/ Viva voce			
AN10.6	Explain the anatomical basis of clinical features of Erb's palsy and Klumpke's paralysis	K	KH	N	Lecture	Written		General Surgery	
AN10.7	Explain anatomical basis of enlarged axillary lymph nodes	K	KH	N	Lecture	Written		General Surgery	
AN10.8	Describe, identify and demonstrate the position, attachment, nerve supply and actions of trapezius and latissimus dorsi	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN10.9	Describe the arterial anastomosis around the scapula and mention the boundaries of triangle of auscultation	K	KH	N	Lecture	Written			
AN10.10	Describe and identify the deltoid and rotator cuff muscles	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN10.11	Describe & demonstrate attachment of serratus anterior with its action	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN10.12	Describe and demonstrate shoulder joint for– type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, muscles involved, blood supply, nerve supply and applied anatomy	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		Orthopedics	
AN10.13	Explain anatomical basis of Injury to axillary nerve during intramuscular injections	K	KH	N	Lecture	Viva voce			
Topic: Arm & Cubital fossa		**Number of competencies: (6)**				**Number of procedures for certification: (NIL)**			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN11.1	Describe and demonstrate muscle groups of upper arm with emphasis on biceps and triceps brachii	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN11.2	Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels in arm	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN11.3	Describe the anatomical basis of Venepuncture of cubital veins	K	KH	Y	Practical, Lecture	Written/ Viva voce		General Surgery	
AN11.4	Describe the anatomical basis of Saturday night paralysis	K	KH	Y	Practical, Lecture	Written/ Viva voce		Orthopedics	
AN11.5	Identify & describe boundaries and contents of cubital fossa	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN11.6	Describe the anastomosis around the elbow joint	K	KH	N	Lecture	Written			
Topic: Forearm & hand		**Number of competencies: (15)**				**Number of procedures for certification: (NIL)**			
AN12.1	Describe and demonstrate important muscle groups of ventral forearm with attachments, nerve supply and actions	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN12.2	Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels of forearm	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN12.3	Identify & describe flexor retinaculum with its attachments	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN12.4	Explain anatomical basis of carpal tunnel syndrome	K	KH	Y	Lecture	Written/ Viva voce			
AN12.5	Identify & describe small muscles of hand. Also describe movements of thumb and muscles involved	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN12.6	Describe & demonstrate movements of thumb and muscles involved	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN12.7	Identify & describe course and branches of important blood vessels and nerves in hand	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN12.8	Describe anatomical basis of Claw hand	K	KH	Y	Lecture	Written/ Viva voce		General Surgery	
AN12.9	Identify & describe fibrous flexor sheaths, ulnar bursa, radial bursa and digital synovial sheaths	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN12.10	Explain infection of fascial spaces of palm	K	KH	N	Lecture	Written		General Surgery	
AN12.11	Identify, describe and demonstrate important muscle groups of dorsal forearm with attachments, nerve supply and actions	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		General Surgery	
AN12.12	Identify & describe origin, course, relations, branches (or tributaries), termination of important nerves and vessels of back of forearm	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		General Surgery	
AN12.13	Describe the anatomical basis of Wrist drop	K	KH	Y	Lecture	Written/ Viva voce		General Surgery	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN12.14	Identify & describe compartments deep to extensor retinaculum	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		General Surgery	
AN12.15	Identify & describe extensor expansion formation	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
Topic: General Features, Joints, radiographs & surface marking		**Number of competencies: (8)**				**Number of procedures for certification: (NIL)**			
AN13.1	Describe and explain Fascia of upper limb and compartments, veins of upper limb and its lymphatic drainage	K	KH	Y	Lecture	Written/ Viva voce			
AN13.2	Describe dermatomes of upper limb	K	KH	N	Lecture	Written/ Viva voce			
AN13.3	Identify & describe the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements, blood and nerve supply of elbow joint, proximal and distal radio-ulnar joints, wrist joint & first carpometacarpal joint	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN13.4	Describe Sternoclavicular joint, Acromioclavicular joint, Carpometacarpal joints & Metacarpophalangeal joint	K	KH	N	Lecture	Written			
AN13.5	Identify the bones and joints of upper limb seen in anteroposterior and lateral view radiographs of shoulder region, arm, elbow, forearm and hand	K/S	SH	Y	Practical, Small group discussion, DOAP session	Viva voce/ skill assessment		Radiodiagnosis	
AN13.6	Identify & demonstrate important bony landmarks of upper limb: Jugular notch, sternal angle, acromial angle, spine of the scapula, vertebral level of the medial end, Inferior angle of the scapula	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Viva voce/ skill assessment			
AN13.7	Identify & demonstrate surface projection of: Cephalic and basilic vein, Palpation of Brachial artery, Radial artery, Testing of muscles: Trapezius, pectoralis major, serratus anterior, latissimus dorsi, deltoid, biceps brachii, Brachioradialis	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Viva voce/ skill assessment			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN13.8	Describe development of upper limb	K	KH	N	Lecture	Written			
Features of individual bones (Lower Limb)		**Number of competencies: (4)**				**Number of procedures for certification: (NIL)**			
AN14.1	Identify the given bone, its side, important features & keep it in anatomical position	K/S	SH	Y	DOAP session	Viva voce			
AN14.2	Identify & describe joints formed by the given bone	K/S	SH	Y	Lecture, DOAP session	Viva voce			
AN14.3	Describe the importance of ossification of lower end of femur & upper end of tibia	K	KH	Y	Lecture	Viva voce/ Practicals		Forensic Medicine & Toxicology	
AN14.4	Identify and name various bones in the articulated foot with individual muscle attachment	K/S	SH	N	Practical, DOAP session, Small group teaching	Viva voce/ Practicals			
Topic: Front & Medial side of thigh		**Number of competencies: (5) ♂**				**Number of procedures for certification: (NIL)**			
AN15.1	Describe and demonstrate origin, course, relations, branches (or tributaries), termination of important nerves and vessels of anterior thigh	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN15.2	Describe and demonstrate major muscles with their attachment, nerve supply and actions	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN15.3	Describe and demonstrate boundaries, floor, roof and contents of femoral triangle	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		General Surgery	
AN15.4	Explain anatomical basis of Psoas abscess & Femoral hernia	K	KH	N	Lecture, DOAP session	Written/ Viva voce		General Surgery	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN15.5	Describe and demonstrate adductor canal with its content	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
Topic: Gluteal region & back of thigh		**Number of competencies: (6)**				**Number of procedures for certification: (NIL)**			
AN16.1	Describe and demonstrate origin, course, relations, branches (or tributaries), termination of important nerves and vessels of gluteal region	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN16.2	Describe anatomical basis of sciatic nerve injury during gluteal intramuscular injections	K	KH	Y	Lecture, DOAP session	Written/ Viva voce		General Surgery	
AN16.3	Explain the anatomical basis of Trendelenburg sign	K	KH	Y	Lecture, DOAP session	Written/ Viva voce		General Surgery	
AN16.4	Describe and demonstrate the hamstrings group of muscles with their attachment, nerve supply and actions	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN16.5	Describe and demonstrate the origin, course, relations, branches (or tributaries), termination of important nerves and vessels on the back of thigh	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN16.6	Describe and demonstrate the boundaries, roof, floor, contents and relations of popliteal fossa	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
Topic: Hip Joint		**Number of competencies: (3)**				**Number of procedures for certification: (NIL)**			
AN17.1	Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply, bursae around the hip joint	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN17.2	Describe anatomical basis of complications of fracture neck of femur	K	KH	N	Lecture	Written/ Viva voce		Orthopedics	
AN17.3	Describe dislocation of hip joint and surgical hip replacement	K	KH	N	Lecture	Written/ Viva voce		Orthopedics	
Topic: Knee joint, Anterolateral compartment of leg & dorsum of foot		**Number of competencies: (7) ♂**				**Number of procedures for certification: (NIL)**			
AN18.1	Describe and demonstrate major muscles of anterolateral compartment of leg with their attachment, nerve supply and actions	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN18.2	Describe and demonstrate origin, course, relations, branches (or tributaries), termination of important nerves and vessels of anterior compartment of leg	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN18.3	Explain the anatomical basis of foot drop	K	KH	Y	Lecture, DOAP session	Written/ Viva voce		General Surgery	
AN18.4	Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply, bursae around the knee joint	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN18.5	Explain the anatomical basis of locking and unlocking of the knee joint	K	KH	Y	Small group teaching	Written/ Viva voce			
AN18.6	Describe knee joint injuries with its applied anatomy	K	KH	N	Lecture	Written/ Viva voce		Orthopedics	
AN18.7	Explain anatomical basis of Osteoarthritis	K	KH	N	Lecture	Written/ Viva voce		Orthopedics	
Topic: Back of Leg & Sole		**Number of competencies: (7)**				**Number of procedures for certification: (NIL)**			
AN19.1	Describe and demonstrate the major muscles of back of leg with their attachment, nerve supply and actions	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN19.2	Describe and demonstrate the origin, course, relations, branches (or tributaries), termination of important nerves and vessels of back of leg	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN19.3	Explain the concept of “Peripheral heart”	K	KH	Y	Lecture	Written/ Viva voce		General Surgery	
AN19.4	Explain the anatomical basis of rupture of calcaneal tendon	K	KH	N	Lecture	Written/ Viva voce		Orthopedics	
AN19.5	Describe factors maintaining importance arches of the foot with its importance	K	KH	Y	Lecture	Written/ Viva voce			
AN19.6	Explain the anatomical basis of Flat foot & Club foot	K	KH	N	Lecture	Written/ Viva voce		Orthopedics	
AN19.7	Explain the anatomical basis of Metatarsalgia & Plantar fasciitis	K	KH	N	Lecture	Written/ Viva voce		Orthopedics	
Topic: General Features, Joints, radiographs & surface marking		**Number of competencies: (10)**				**Number of procedures for certification: (NIL)**			
AN20.1	Describe and demonstrate the type, articular surfaces, capsule, synovial membrane, ligaments, relations, movements and muscles involved, blood and nerve supply of tibiofibular and ankle joint	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN20.2	Describe the subtalar and transverse tarsal joints	K	KH	N	Lecture, DOAP session	Written/ Viva voce			
AN20.3	Describe and demonstrate Fascia lata, Venous drainage, Lymphatic drainage, Retinacula & Dermatomes of lower limb	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN20.4	Explain anatomical basis of enlarged inguinal lymph nodes	K	KH	N	Lecture	Written/ Viva voce		General Surgery	
AN20.5	Explain anatomical basis of varicose veins and deep vein thrombosis	K	KH	Y	Lecture	Written/ Viva voce		General Surgery	
AN20.6	Identify the bones and joints of lower limb seen in anteroposterior and lateral view radiographs of various regions of lower limb	K/S	SH	Y	Lecture, Small group discussion, DOAP session	Viva voce/ skill assessment		Radiodiagnosis	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN20.7	Identify & demonstrate important bony landmarks of lower limb: -Vertebral levels of highest point of iliac crest, posterior superior iliac spines, iliac tubercle, pubic tubercle, ischial tuberosity, adductor tubercle, -Tibial tuberosity, head of fibula, -Medial and lateral malleoli, Condyles of femur and tibia, sustentaculum tali, tuberosity of fifth metatarsal, tuberosity of the navicular	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Viva voce/ skill assessment			
AN20.8	Identify & demonstrate palpation of femoral, popliteal, post tibial, anti tibial & dorsalis pedis blood vessels in a simulated environment	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Viva voce/ skill assessment		General Medicine	
AN20.9	Identify & demonstrate Palpation of vessels (femoral, popliteal,dorsalis pedis,post tibial), Mid inguinal point, Surface projection of: femoral nerve, Saphenous opening, Sciatic, tibial, common peroneal & deep peroneal nerve, Great and small saphenous veins	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Viva voce/ skill assessment		General Medicine, General Surgery	
AN20.10	Describe basic concept of development of lower limb	K	KH	N	Lecture	Viva voce			
Topic: Thoracic cage		**Number of competencies: (11)**				**Number of procedures for certification: (NIL)**			
AN21.1	Identify and describe the salient features of sternum, typical rib, Ist rib and typical thoracic vertebra	K/S	SH	Y	Lecture, DOAP session	Viva voce/ skill assessment			
AN21.2	Identify & describe the features of 2nd, 11th and 12th ribs, 1st, 11th and 12th thoracic vertebrae	K/S	SH	N	Lecture, DOAP session	Viva voce/ skill assessment			
AN21.3	Describe & demonstrate the boundaries of thoracic inlet, cavity and outlet	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN21.4	Describe & demonstrate extent, attachments, direction of fibres, nerve supply and actions of intercostal muscles	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN21.5	Describe & demonstrate origin, course, relations and branches of a typical intercostal nerve	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN21.6	Mention origin, course and branches/ tributaries of: 1) anterior & posterior intercostal vessels 2) internal thoracic vessels	K	KH	Y	Practical, Lecture	Written/ Viva voce			
AN21.7	Mention the origin, course, relations and branches of 1) atypical intercostal nerve 2) superior intercostal artery, subcostal artery	K	KH	N	Lecture	Written			
AN21.8	Describe & demonstrate type, articular surfaces & movements of manubriosternal, costovertebral, costotransverse and xiphisternal joints	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN21.9	Describe & demonstrate mechanics and types of respiration	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			Physiology
AN21.10	Describe costochondral and interchondral joints	K	KH	N	Lecture	Written			
AN21.11	Mention boundaries and contents of the superior, anterior, middle and posterior mediastinum	K	KH	Y	Practical, Lecture	Written/ Viva voce			
Topic: Heart & Pericardium		**Number of competencies: (7)**				**Number of procedures for certification: (NIL)**			
AN22.1	Describe & demonstrate subdivisions, sinuses in pericardium, blood supply and nerve supply of pericardium	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN22.2	Describe & demonstrate external and internal features of each chamber of heart	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			Physiology
AN22.3	Describe & demonstrate origin, course and branches of coronary arteries	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			Physiology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN22.4	Describe anatomical basis of ischaemic heart disease	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	Physiology
AN22.5	Describe & demonstrate the formation, course, tributaries and termination of coronary sinus	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN22.6	Describe the fibrous skeleton of heart	K	KH	Y	Lecture	Written			
AN22.7	Mention the parts, position and arterial supply of the conducting system of heart	K	KH	Y	Lecture	Written		General Medicine	Physiology
Topic: Mediastinum		**Number of competencies: (7)**				**Number of procedures for certification: (NIL)**			
AN23.1	Describe & demonstrate the external appearance, relations, blood supply, nerve supply,lymphatic drainage and applied anatomy of oesophagus	K/S	SH	Y	Practical, Lecture, DOAP session	Written/ Viva voce/ skill assessment		General Surgery	
AN23.2	Describe & demonstrate the extent, relations tributaries of thoracic duct and enumerate its applied anatomy	K/S	SH	Y	Practical, Lecture, DOAP session	Written/ Viva voce/ skill assessment		General Surgery	
AN23.3	Describe & demonstrate origin, course, relations, tributaries and termination of superior venacava, azygos, hemiazygos and accessory hemiazygos veins	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN23.4	Mention the extent, branches and relations of arch of aorta & descending thoracic aorta	K	KH	Y	Practical, Lecture	Written/ Viva voce			
AN23.5	Identify & Mention the location and extent of thoracic sympathetic chain	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN23.6	Describe the splanchnic nerves	K	KH	N	Lecture	Written			
AN23.7	Mention the extent, relations and applied anatomy of lymphatic duct	K	KH	Y	Lecture	Written/ Viva voce		General Surgery	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
Topic: Lungs & Trachea		**Number of competencies: (6)**				**Number of procedures for certification: (NIL)**			
AN24.1	Mention the blood supply, lymphatic drainage and nerve supply of pleura, extent of pleura and describe the pleural recesses and their applied anatomy	K	KH	Y	Practical, Lecture	Written/ Viva voce		General Medicine	Physiology
AN24.2	Identify side, external features and relations of structures which form root of lung & bronchial tree and their clinical correlate	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		General Medicine	Physiology
AN24.3	Describe a bronchopulmonary segment	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	Physiology
AN24.4	Identify phrenic nerve & describe its formation & distribution	K/S	SH	Y	Lecture, Practical	Written/ Viva voce			
AN24.5	Mention the blood supply, lymphatic drainage and nerve supply of lungs	K	KH	Y	Lecture	Written/ Viva voce			
AN24.6	Describe the extent, length, relations, blood supply, lymphatic drainage and nerve supply of trachea	K	KH	N	Lecture	Written			
Topic: Thorax		**Number of competencies: (9)**				**Number of procedures for certification: (01)**			
AN25.1	Identify, draw and label a slide of trachea and lung	K/S	SH	Y	Lecture, Practical	Written/ skill assessment	1		
AN25.2	Describe development of pleura, lung & heart	K	KH	Y	Lecture	Written			
AN25.3	Describe fetal circulation and changes occurring at birth	K	KH	Y	Lecture	Written		General Medicine	Physiology
AN25.4	Describe embryological basis of: 1) atrial septal defect, 2) ventricular septal defect, 3) Fallot's tetralogy & 4) tracheo-oesophageal fistula	K	KH	Y	Lecture	Written/ Viva voce		General Medicine, Pediatrics	Physiology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN25.5	Describe developmental basis of congenital anomalies, transposition of great vessels, dextrocardia, patent ductus arteriosus and coarctation of aorta	K	KH	Y	Lecture	Written/ Viva voce		General Medicine, Pediatrics	Physiology
AN25.6	Mention development of aortic arch arteries, SVC, IVC and coronary sinus	K	KH	N	Lecture	Written/ Viva voce			
AN25.7	Identify structures seen on a plain x-ray chest (PA view)	K/S	SH	Y	Practical, DOAP session	Written/ Viva voce		Radiodiagnosis, General Medicine	
AN25.8	Identify and describe in brief a barium swallow	K/S	SH	N	Practical, DOAP session	Written/ Viva voce		Radiodiagnosis, General Medicine	
AN25.9	Demonstrate surface marking of lines of pleural reflection, lung borders and fissures, trachea, heart borders, apex beat & surface projection of valves of heart	K/S	SH	Y	Practical	Viva voce/ skill assessment		General Medicine, Pediatrics	Physiology
Topic: Skull osteology		**Number of competencies: (7)**				**Number of procedures for certification: (NIL)**			
AN26.1	Demonstrate anatomical position of skull, Identify and locate individual skull bones in skull	K/S	SH	Y	Lecture, DOAP session	Viva voce/ skill assessment			
AN26.2	Describe the features of norma frontalis, verticalis, occipitalis, lateralis and basalis	K/S	SH	Y	Lecture, DOAP session	Viva voce/ skill assessment			
AN26.3	Describe cranial cavity, its subdivisions, foramina and structures passing through them	K/S	SH	Y	Lecture, DOAP session	Viva voce/ skill assessment			
AN26.4	Describe morphological features of mandible	K/S	SH	Y	Lecture, DOAP session	Viva voce/ skill assessment			
AN26.5	Describe features of typical and atypical cervical vertebrae (atlas and axis)	K/S	SH	Y	Lecture, DOAP session	Viva voce/ skill assessment			
AN26.6	Explain the concept of bones that ossify in membrane	K	KH	N	Lecture	Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN26.7	Describe the features of the 7th cervical vertebra	K/S	SH	N	DOAP session	Viva voce			
Topic: Scalp		**Number of competencies: (2)**				**Number of procedures for certification: (NIL)**			
AN27.1	Describe the layers of scalp, its blood supply, its nerve supply and surgical importance	K	KH	Y	Practical, Lecture	Written/ Viva voce		General Surgery	
AN27.2	Describe emissary veins with its role in spread of infection from extracranial route to intracranial venous sinuses	K	KH	Y	Lecture	Written			
Topic: Face & parotid region		**Number of competencies: (10)**				**Number of procedures for certification: (NIL)**			
AN28.1	Describe & demonstrate muscles of facial expression and their nerve supply	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN28.2	Describe sensory innervation of face	K	KH	Y	Practical, Lecture	Written/ Viva voce			
AN28.3	Describe & demonstrate origin /formation, course, branches /tributaries of facial vessels	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN28.4	Describe & demonstrate branches of facial nerve with distribution	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN28.5	Describe cervical lymph nodes and lymphatic drainage of head, face and neck	K	KH	Y	Practical, Lecture	Written/ Viva voce			
AN28.6	Identify superficial muscles of face, their nerve supply and actions	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN28.7	Explain the anatomical basis of facial nerve palsy	K	KH	Y	Lecture	Written		General Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN28.8	Explain surgical importance of deep facial vein	K	KH	Y	Lecture	Written		General Surgery	
AN28.9	Describe & demonstrate the parts, borders, surfaces, contents, relations and nerve supply of parotid gland with course of its duct and surgical importance	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		General Surgery	
AN28.10	Explain the anatomical basis of Frey's syndrome	K	KH	N	Lecture	Written		General Surgery	
Topic: Posterior triangle of neck		**Number of competencies: (4)**				**Number of procedures for certification: (NIL)**			
AN29.1	Describe & demonstrate attachments, nerve supply, relations and actions of sternocleidomastoid	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN29.2	Explain anatomical basis of Erb's & Klumpke's palsy	K	KH	Y	Lecture	Written		General Surgery	
AN29.3	Explain anatomical basis of wry neck	K	KH	N	Lecture	Written		General Surgery	
AN29.4	Describe & demonstrate attachments of 1) inferior belly of omohyoid, 2)scalenus anterior, 3) scalenus medius & 4) levator scapulae	K/S	SH	N	Lecture, Practical	Written/ Viva voce			
Topic: Cranial cavity		**Number of competencies: (5)**				**Number of procedures for certification: (NIL)**			
AN30.1	Describe the cranial fossae & identify related structures	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		General Surgery	
AN30.2	Describe & identify major foramina with structures passing through them	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		General Surgery	
AN30.3	Describe & identify dural folds & dural venous sinuses	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN30.4	Describe clinical importance of dural venous sinuses	K	KH	Y	Lecture	Written			
AN30.5	Explain effect of pituitary tumours on visual pathway	K	KH	N	Lecture	Written		Ophthalmology	
Topic: Orbit		**Number of competencies: (5)**			**Number of procedures for certification: (NIL)**				
AN31.1	Describe & identify extra ocular muscles of eyeball	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN31.2	Describe & demonstrate nerves and vessels in the orbit	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN31.3	Describe anatomical basis of Horner's syndrome	K	KH	N	Lecture	Written		Ophthalmology	
AN31.4	Enumerate components of lacrimal apparatus	K	KH	Y	Lecture	Written			
AN31.5	Explain the anatomical basis of oculomotor, trochlear and abducent nerve palsies along with strabismus	K	KH	Y	Lecture	Written		Ophthalmology	
Topic: Anterior Triangle		**Number of competencies: (2)**			**Number of procedures for certification: (NIL)**				
AN32.1	Describe boundaries and subdivisions of anterior triangle	K	KH	Y	Practical, Lecture	Written/ Viva voce			
AN32.2	Describe & demonstrate boundaries and contents of muscular, carotid, digastric and submental triangles	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
Topic: Temporal and Infratemporal regions		**Number of competencies: (5)**			**Number of procedures for certification: (NIL)**				
AN33.1	Describe & demonstrate extent, boundaries and contents of temporal and infratemporal fossae	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN33.2	Describe & demonstrate attachments, direction of fibres, nerve supply and actions of muscles of mastication	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		General Surgery	
AN33.3	Describe & demonstrate articulating surface, type & movements of temporomandibular joint	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN33.4	Explain the clinical significance of pterygoid venous plexus	K	KH	Y	Lecture	Written		General Surgery	
AN33.5	Describe the features of dislocation of temporomandibular joint	K	KH	N	Lecture	Written		General Surgery	
Topic: Submandibular region		**Number of competencies: (2)**				**Number of procedures for certification: (NIL)**			
AN34.1	Describe & demonstrate the morphology, relations and nerve supply of submandibular salivary gland & submandibular ganglion	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		General Surgery	
AN34.2	Describe the basis of formation of submandibular stones	K	KH	N	Lecture	Written		General Surgery	
Topic: Deep structures in the neck		**Number of competencies: (10)**				**Number of procedures for certification: (NIL)**			
AN35.1	Describe the parts, extent, attachments, modifications of deep cervical fascia	K	KH	Y	Lecture	Written			
AN35.2	Describe & demonstrate location, parts, borders, surfaces, relations & blood supply of thyroid gland	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		General Surgery	
AN35.3	Demonstrate & describe the origin, parts, course & branches subclavian artery	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN35.4	Describe & demonstrate origin, course, relations, tributaries and termination of internal jugular & brachiocephalic veins	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN35.5	Describe and demonstrate extent, drainage & applied anatomy of cervical lymph nodes	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		General Surgery	
AN35.6	Describe and demonstrate the extent, formation, relation & branches of cervical sympathetic chain	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN35.7	Describe the course and branches of IX, X, XI & XII nerve in the neck	K	KH	Y	Lecture	Written			
AN35.8	Describe the anatomically relevant clinical features of Thyroid swellings	K	KH	N	Lecture	Written		General Surgery	
AN35.9	Describe the clinical features of compression of subclavian artery and lower trunk of brachial plexus by cervical rib	K	KH	N	Lecture	Written		General Surgery	
AN35.10	Describe the fascial spaces of neck	K	KH	N	Lecture	Written			
Topic: Mouth, Pharynx & Palate		**Number of competencies: (5)**				**Number of procedures for certification: (NIL)**			
AN36.1	Describe the 1) morphology, relations, blood supply and applied anatomy of palatine tonsil 2) composition of soft palate	K	KH	Y	Lecture	Written		ENT	
AN36.2	Describe the components and functions of Waldeyer's lymphatic ring	K	KH	Y	Lecture	Written		ENT	
AN36.3	Describe the boundaries and clinical significance of pyriform fossa	K	KH	N	Lecture	Written		ENT	
AN36.4	Describe the anatomical basis of tonsillitis, tonsillectomy, adenoids and peri-tonsillar abscess	K	KH	N	Lecture	Written		ENT	
AN36.5	Describe the clinical significance of Killian's dehiscence	K	KH	N	Lecture	Written		ENT	
Topic: Cavity of Nose		**Number of competencies: (3)**				**Number of procedures for certification: (NIL)**			
AN37.1	Describe & demonstrate features of nasal septum, lateral wall of nose, their blood supply and nerve supply	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		ENT	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN37.2	Describe location and functional anatomy of paranasal sinuses	K	KH	Y	Lecture	Written		ENT	
AN37.3	Describe anatomical basis of sinusitis & maxillary sinus tumours	K	KH	N	Lecture	Written		ENT	
Topic: Larynx		**Number of competencies: (3)**				**Number of procedures for certification: (NIL)**			
AN38.1	Describe the morphology, identify structure of the wall, nerve supply, blood supply and actions of intrinsic and extrinsic muscles of the larynx	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		ENT	
AN38.2	Describe the anatomical aspects of laryngitis	K	KH	N	Lecture	Written		ENT	
AN38.3	Describe anatomical basis of recurrent laryngeal nerve injury	K	KH	N	Lecture	Written		ENT	
Topic: Tongue		**Number of competencies: (2)**				**Number of procedures for certification: (NIL)**			
AN39.1	Describe & demonstrate the morphology, nerve supply, embryological basis of nerve supply, blood supply, lymphatic drainage and actions of extrinsic and intrinsic muscles of tongue	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN39.2	Explain the anatomical basis of hypoglossal nerve palsy	K	KH	N	Lecture	Written		ENT	
Topic: Organs of hearing and equilibrium		**Number of competencies: (5)**				**Number of procedures for certification: (NIL)**			
AN40.1	Describe & identify the parts, blood supply and nerve supply of external ear	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		ENT	
AN40.2	Describe & demonstrate the boundaries, contents, relations and functional anatomy of middle ear and auditory tube	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		ENT	
AN40.3	Describe the features of internal ear	K	KH	N	Lecture	Written		ENT	
AN40.4	Explain anatomical basis of otitis externa and otitis media	K	KH	N	Lecture	Written		ENT	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN40.5	Explain anatomical basis of myringotomy	K	KH	N	Lecture	Written		ENT	
Topic: Eyeball		**Number of competencies: (3)**			**Number of procedures for certification: (NIL)**				
AN41.1	Describe & demonstrate parts and layers of eyeball	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		Ophthalmology	
AN41.2	Describe the anatomical aspects of cataract, glaucoma & central retinal artery occlusion	K	KH	N	Lecture	Written		Ophthalmology	
AN41.3	Describe the position, nerve supply and actions of intraocular muscles	K	KH	N	Lecture	Written		Ophthalmology	
Topic: Back Region		**Number of competencies: (3)**			**Number of procedures for certification: (NIL)**				
AN42.1	Describe the contents of the vertebral canal	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN42.2	Describe & demonstrate the boundaries and contents of Suboccipital triangle	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN42.3	Describe the position, direction of fibres, relations, nerve supply, actions of semispinalis capitis and splenius capitis	K	KH	N	Lecture	Written			
Topic: Head & neck Joints, Histology, Development, Radiography & Surface marking		**Number of competencies: (9)**			**Number of procedures for certification: (NIL)**				
AN43.1	Describe & demonstrate the movements with muscles producing the movements of atlantooccipital joint & atlantoaxial joint	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN43.2	Identify, describe and draw the microanatomy of pituitary gland, thyroid, parathyroid gland, tongue, salivary glands, tonsil, epiglottis, cornea, retina	K/S	SH	Y	Lecture, Practical	Written/ skill assessment			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN43.3	Identify, describe and draw microanatomy of olfactory epithelium, eyelid, lip, sclero-corneal junction, optic nerve, cochlea- organ of corti, pineal gland	K/S	SH	N	Lecture, Practical	Written/ skill assessment			
AN43.4	Describe the development and developmental basis of congenital anomalies of face, palate, tongue, branchial apparatus, pituitary gland, thyroid gland & eye	K	KH	Y	Lecture	Written/ Viva voce			
AN43.5	Demonstrate- 1) Testing of muscles of facial expression, extraocular muscles, muscles of mastication, 2) Palpation of carotid arteries, facial artery, superficial temporal artery, 3) Location of internal and external jugular veins, 4) Location of hyoid bone, thyroid cartilage and cricoid cartilage with their vertebral levels	K/S	SH	Y	Practical	Viva voce/ skill assessment		General Surgery	
AN43.6	Demonstrate surface projection of- Thyroid gland, Parotid gland and duct, Pterion, Common carotid artery, Internal jugular vein, Subclavian vein, External jugular vein, Facial artery in the face & accessory nerve	K/S	SH	N	Practical	Viva voce/ skill assessment		General Surgery	
AN43.7	Identify the anatomical structures in 1) Plain x-ray skull, 2) AP view and lateral view 3) Plain x-ray cervical spine-AP and lateral view 4) Plain x-ray of paranasal sinuses	K/S	SH	Y	Practical	Viva voce/ skill assessment		Radiodiagnosis	
AN43.8	Describe the anatomical route used for carotid angiogram and vertebral angiogram	K/S	SH	N	Practical	Viva voce/ skill assessment		Radiodiagnosis	
AN43.9	Identify anatomical structures in carotid angiogram and vertebral angiogram	K/S	SH	N	Practical	Viva voce/ skill assessment		Radiodiagnosis	
Topic: Anterior abdominal wall		**Number of competencies: (7)**				**Number of procedures for certification: (NIL)**			
AN44.1	Describe & demonstrate the Planes (transpyloric, transtubercular, subcostal, lateral vertical, linea alba, linea semilunaris), regions & Quadrants of abdomen	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		General Surgery	
AN44.2	Describe & identify the Fascia, nerves & blood vessels of anterior abdominal wall	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN44.3	Describe the formation of rectus sheath and its contents	K	KH	Y	Lecture	Written/ Viva voce			
AN44.4	Describe & demonstrate extent, boundaries, contents of Inguinal canal including Hesselbach's triangle.	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		General Surgery	
AN44.5	Explain the anatomical basis of inguinal hernia.	K	KH	Y	Lecture	Written/ Viva voce		General Surgery	
AN44.6	Describe & demonstrate attachments of muscles of anterior abdominal wall	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		General Surgery	
AN44.7	Enumerate common Abdominal incisions	K	KH	N	Lecture	Written		General Surgery	
Topic: Posterior abdominal wall		**Number of competencies: (3)**				**Number of procedures for certification: (NIL)**			
AN45.1	Describe Thoracolumbar fascia	K	KH	Y	Lecture	Written			
AN45.2	Describe & demonstrate Lumbar plexus for its root value, formation & branches	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN45.3	Mention the major subgroups of back muscles, nerve supply and action	K	KH	N	Lecture	Written			
Topic: Male external genitalia		**Number of competencies: (5)**				**Number of procedures for certification: (NIL)**			
AN46.1	Describe & demonstrate coverings, internal structure, side determination, blood supply, nerve supply, lymphatic drainage & descent of testis with its applied anatomy	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		General Surgery	
AN46.2	Describe parts of Epididymis	K	KH	Y	Lecture, Practical	Written/ Viva voce			
AN46.3	Describe Penis under following headings: (parts, components, blood supply and lymphatic drainage)	K	KH	Y	Lecture, Practical	Written/ Viva voce			
AN46.4	Explain the anatomical basis of Varicocoele	K	KH	N	Lecture	Written		General Surgery	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN46.5	Explain the anatomical basis of Phimosis & Circumcision	K	KH	N	Lecture	Written		General Surgery	
Topic: Abdominal cavity		**Number of competencies: (14)**				**Number of procedures for certification: (NIL)**			
AN47.1	Describe & identify boundaries and recesses of Lesser & Greater sac	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		General Surgery	
AN47.2	Name & identify various peritoneal folds & pouches with its explanation .	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		General Surgery	
AN47.3	Explain anatomical basis of Ascites & Peritonitis	K	KH	N	Lecture	Written		General Surgery	
AN47.4	Explain anatomical basis of Subphrenic abscess	K	KH	N	Lecture	Written		General Surgery	
AN47.5	Describe & demonstrate major viscera of abdomen under following headings (anatomical position, external and internal features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and applied aspects)	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		General Surgery	
AN47.6	Explain the anatomical basis of Splenic notch, Accessory spleens, Kehr's sign, Different types of vagotomy, Liver biopsy (site of needle puncture), Referred pain in cholecystitis, Obstructive jaundice, Referred pain around umbilicus, Radiating pain of kidney to groin & Lymphatic spread in carcinoma stomach	K	KH	N	Lecture	Written		General Surgery	
AN47.7	Mention the clinical importance of Calot's triangle	K	KH	N	Lecture	Written		General Surgery	
AN47.8	Describe & identify the formation, course relations and tributaries of Portal vein, Inferior vena cava & Renal vein	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN47.9	Describe & identify the origin, course, important relations and branches of Abdominal aorta, Coeliac trunk, Superior mesenteric, Inferior mesenteric & Common iliac artery	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN47.10	Enumerate the sites of portosystemic anastomosis	K	KH	Y	Lecture	Written		General Surgery	
AN47.11	Explain the anatomic basis of hematemesis& caput medusae in portal hypertension	K	KH	Y	Lecture,	Written/ Viva voce		General Surgery	
AN47.12	Describe important nerve plexuses of posterior abdominal wall	K	KH	N	Lecture	Written			
AN47.13	Describe & demonstrate the attachments, openings, nerve supply & action of the thoracoabdominal diaphragm	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN47.14	Describe the abnormal openings of thoracoabdominal diaphragm and diaphragmatic hernia	K	KH	N	Lecture	Written		General Surgery	
Topic: Pelvic wall and viscera		**Number of competencies: (8)**				**Number of procedures for certification: (NIL)**			
AN48.1	Describe & identify the muscles of Pelvic diaphragm	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN48.2	Describe & demonstrate the (position, features, important peritoneal and other relations, blood supply, nerve supply, lymphatic drainage and clinical aspects of) important male & female pelvic viscera	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN48.3	Describe & demonstrate the origin, course, important relations and branches of internal iliac artery	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN48.4	Describe the branches of sacral plexus	K	KH	Y	Lecture	Written			
AN48.5	Explain the anatomical basis of suprapubic cystostomy, Urinary obstruction in benign prostatic hypertrophy, Retroverted uterus, Prolapse uterus, Internal and external haemorrhoids, Anal fistula, Vasectomy, Tubal pregnancy & Tubal ligation	K	KH	N	Lecture	Written		General Surgery	
AN48.6	Describe the neurological basis of Automatic bladder	K	KH	N	Lecture	Written		General Surgery	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN48.7	Mention the lobes involved in benign prostatic hypertrophy & prostatic cancer	K	KH	N	Lecture	Written		General Surgery	
AN48.8	Mention the structures palpable during vaginal & rectal examination	K	KH	N	Lecture	Written		Obstetrics & Gynaecology General Surgery	
Topic: Perineum		**Number of competencies: (5)**				**Number of procedures for certification: (NIL)**			
AN49.1	Describe & demonstrate the superficial & deep perineal pouch (boundaries and contents)	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		Obstetrics & Gynaecology	
AN49.2	Describe & identify Perineal body	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		Obstetrics & Gynaecology	
AN49.3	Describe & demonstrate Perineal membrane in male & female	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN49.4	Describe & demonstrate boundaries, content & applied anatomy of Ischiorectal fossa	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		General Surgery	
AN49.5	Explain the anatomical basis of Perineal tear, Episiotomy, Perianal abscess and Anal fissure	K	KH	N	Lecture	Written		Obstetrics & Gynaecology	
Topic: Vertebral column		**Number of competencies: (4)**				**Number of procedures for certification: (NIL)**			
AN50.1	Describe the curvatures of the vertebral column	K	KH	Y	Lecture	Written/ Viva voce			
AN50.2	Describe & demonstrate the type, articular ends, ligaments and movements of Intervertebral joints, Sacroiliac joints & Pubic symphysis	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN50.3	Describe lumbar puncture (site, direction of the needle, structures pierced during the lumbar puncture)	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	
AN50.4	Explain the anatomical basis of Scoliosis, Lordosis, Prolapsed disc, Spondylolisthesis & Spina bifida	K	KH	N	Lecture	Written		Orthopedics	
Topic: Sectional Anatomy		**Number of competencies: (2)**				**Number of procedures for certification: (NIL)**			
AN51.1	Describe & identify the cross-section at the level of T8, T10 and L1 (transpyloric plane)	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		Radiodiagnosis	
AN51.2	Describe & identify the midsagittal section of male and female pelvis	K	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		Radiodiagnosis	
Topic: Histology & Embryology		**Number of competencies: (8)**				**Number of procedures for certification: (NIL)**			
AN52.1	Describe & identify the microanatomical features of Gastro-intestinal system: Oesophagus, Fundus of stomach, Pylorus of stomach, Duodenum, Jejunum, Ileum, Large intestine, Appendix, Liver, Gall bladder, Pancreas & Suprarenal gland	K/S	SH	**Y**	Lecture, Practical	Written/ skill assessment			
AN52.2	Describe & identify the microanatomical features of: Urinary system: Kidney, Ureter & Urinary bladder Male Reproductive System: Testis, Epididymis,Vas deferens, Prostate & penis Female reproductive system: Ovary, Uterus, Uterine tube, Cervix, Placenta & Umbilical cord	K/S	SH	Y	Lecture, Practical	Written/ skill assessment			
AN52.3	Describe & identify the microanatomical features of Cardiooesophageal junction, Corpus luteum	K/S	SH	N	Lecture, Practical	Written/ skill assessment			
AN52.4	Describe the development of anterior abdominal wall	K	KH	N	Lecture	Written/ Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN52.5	Describe the development and congenital anomalies of Diaphragm	K	KH	Y	Lecture	Written/ Viva voce		General Surgery	
AN52.6	Describe the development and congenital anomalies of: Foregut, Midgut & Hindgut	K	KH	Y	Lecture	Written/ Viva voce		General Surgery	
AN52.7	Describe the development of Urinary system	K	KH	Y	Lecture	Written/ Viva voce		General Surgery	
AN52.8	Describe the development of male & female reproductive system	K	KH	Y	Lecture	Written/ Viva voce		Obstetrics & Gynaecology	
Topic: Osteology		**Number of competencies: (4)**				**Number of procedures for certification: (NIL)**			
AN53.1	Identify & hold the bone in the anatomical position, Describe the salient features, articulations & demonstrate the attachments of muscle groups	K/S	SH	Y	Lecture, DOAP session	Viva voce/ skill assessment		General Surgery, Obstetrics & Gynaecology	
AN53.2	Demonstrate the anatomical position of bony pelvis & show boundaries of pelvic inlet, pelvic cavity, pelvic outlet	K/S	SH	Y	Lecture, DOAP session	Viva voce/ skill assessment		Obstetrics & Gynaecology	
AN53.3	Define true pelvis and false pelvis and demonstrate sex determination in male & female bony pelvis	K/S	SH	Y	Lecture, DOAP session	Viva voce/ skill assessment		Obstetrics & Gynaecology	
AN53.4	Explain and demonstrate clinical importance of bones of abdominopelvic region (sacralization of lumbar vertebra, Lumbarization of 1st sacral vertebra, types of bony pelvis & Coccyx)	K/S	SH	N	Lecture, DOAP session	Viva voce/ skill assessment			
Topic: Radiodiagnosis		**Number of competencies: (3)**				**Number of procedures for certification: (NIL)**			
AN54.1	Describe & identify features of plain X ray abdomen	K/S	SH	Y	Lecture, DOAP session	Viva voce/ skill assessment		Radiodiagnosis	
AN54.2	Describe & identify the special radiographs of abdominopelvic region (contrast X ray Barium swallow, Barium meal, Barium enema, Cholecystography, Intravenous pyelography & Hysterosalpingography)	K/S	SH	Y	Lecture, DOAP session	Viva voce/ skill assessment		Radiodiagnosis	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN54.3	Describe role of ERCP, CT abdomen, MRI, Arteriography in radiodiagnosis of abdomen	K	KH	N	Lecture	Viva voce		Radiodiagnosis	
Topic: Surface marking		**Number of competencies: (2)**				**Number of procedures for certification: (NIL)**			
AN55.1	Demonstrate the surface marking of; Regions and planes of abdomen, Superficial inguinal ring, Deep inguinal ring , McBurney's point, Renal Angle & Murphy's point	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Viva voce/ skill assessment		General Surgery	
AN55.2	Demonstrate the surface projections of: Stomach, Liver, Fundus of gall bladder, Spleen, Duodenum, Pancreas, Ileocaecal junction, Kidneys & Root of mesentery	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Viva voce/ skill assessment		General Surgery	
Topic: Meninges & CSF		**Number of competencies: (2)**				**Number of procedures for certification: (NIL)**			
AN56.1	Describe & identify various layers of meninges with its extent & modifications	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		General Medicine	
AN56.2	Describe circulation of CSF with its applied anatomy	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	Physiology
Topic: Spinal Cord		**Number of competencies: (5)**				**Number of procedures for certification: (NIL)**			
AN57.1	Identify external features of spinal cord	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN57.2	Describe extent of spinal cord in child & adult with its clinical implication	K	KH	Y	Lecture	Written/ Viva voce			
AN57.3	Draw & label transverse section of spinal cord at mid-cervical & mid-thoracic level	K	KH	Y	Lecture	Written/ Viva voce			
AN57.4	Enumerate ascending & descending tracts at mid thoracic level of spinal cord	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	Physiology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN57.5	Describe anatomical basis of syringomyelia	K	KH	N	Lecture	Written		General Medicine	Physiology
Topic: Medulla Oblongata		**Number of competencies: (4)**				**Number of procedures for certification: (NIL)**			
AN58.1	Identify external features of medulla oblongata	K/S	SH	Y	Lecture, DOAP session	Written/ Viva voce/ skill assessment			
AN58.2	Describe transverse section of medulla oblongata at the level of 1) pyramidal decussation, 2) sensory decussation 3) ION	K	KH	Y	Lecture	Written/ Viva voce			
AN58.3	Enumerate cranial nerve nuclei in medulla oblongata with their functional group	K	KH	Y	Lecture	Written/ Viva voce			Physiology
AN58.4	Describe anatomical basis & effects of medial & lateral medullary syndrome	K	KH	N	Lecture	Written		General Medicine	Physiology
Topic: Pons		**Number of competencies: (3)**				**Number of procedures for certification: (NIL)**			
AN59.1	Identify external features of pons	K/S	SH	Y	Lecture, DOAP session	Written/ Viva voce/ skill assessment			Physiology
AN59.2	Draw & label transverse section of pons at the upper and lower level	K	KH	Y	Lecture	Written/ Viva voce			
AN59.3	Enumerate cranial nerve nuclei in pons with their functional group	K	KH	Y	Lecture	Written/ Viva voce			
Topic: Cerebellum		**Number of competencies: (3)**				**Number of procedures for certification: (NIL)**			
AN60.1	Describe & demonstrate external & internal features of cerebellum	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN60.2	Describe connections of cerebellar cortex and intracerebellar nuclei	K	KH	Y	Lecture	Written/ Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN60.3	Describe anatomical basis of cerebellar dysfunction	K	KH	N	Lecture	Written		General Medicine	Physiology
Topic: Midbrain		**Number of competencies: (3)**				**Number of procedures for certification: (NIL)**			
AN61.1	Identify external & internal features of midbrain	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			
AN61.2	Describe internal features of midbrain at the level of superior & inferior colliculus	K	KH	Y	Lecture	Written/ Viva voce			
AN61.3	Describe anatomical basis & effects of Benedikt's and Weber's syndrome	K	KH	N	Lecture	Written		General Medicine	Physiology
Topic: Cranial nerve nuclei & Cerebral hemispheres		**Number of competencies: (6)**				**Number of procedures for certification: (NIL)**			
AN62.1	Enumerate cranial nerve nuclei with its functional component	K	KH	Y	Lecture	Written/ Viva voce			
AN62.2	Describe & demonstrate surfaces, sulci, gyri, poles, & functional areas of cerebral hemisphere	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		General Medicine	Physiology
AN62.3	Describe the white matter of cerebrum	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	Physiology
AN62.4	Enumerate parts & major connections of basal ganglia & limbic lobe	K	KH	Y	Lecture	Written/ Viva voce			Physiology
AN62.5	Describe boundaries, parts, gross relations, major nuclei and connections of dorsal thalamus, hypothalamus, epithalamus, metathalamus and subthalamus	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	Physiology
AN62.6	Describe & identify formation, branches & major areas of distribution of circle of Willis	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		General Medicine	Physiology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
Topic: Ventricular System		**Number of competencies: (2)**			**Number of procedures for certification: (NIL)**				
AN63.1	Describe & demonstrate parts, boundaries & features of IIIrd, IVth & lateral ventricle	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment			Physiology
AN63.2	Describe anatomical basis of congenital hydrocephalus	K	KH	N	Lecture	Written		Pediatrics	Physiology
Topic: Histology & Embryology		**Number of competencies: (3)**			**Number of procedures for certification: (NIL)**				
AN64.1	Describe & identify the microanatomical features of Spinal cord, Cerebellum & Cerebrum	K/S	SH	Y	Lecture,Practical	Written/ skill assessment			
AN64.2	Describe the development of neural tube, spinal cord, medulla oblongata, pons, midbrain, cerebral hemisphere & cerebellum	K	KH	Y	Lecture	Written/ Viva voce			
AN64.3	Describe various types of open neural tube defects with its embryological basis	K	KH	N	Lecture	Written/ Viva voce		Obstetrics & Gynaecology, Pediatrics	
Topic: Epithelium histology		**Number of competencies: (2)**			**Number of competencies for certification: (01)**				
AN65.1	Identify epithelium under the microscope & describe the various types that correlate to its function	K/S	P	Y	Lecture, Practical	Written/ skill assessment	1		
AN65.2	Describe the ultrastructure of epithelium	K	KH	N	Lecture, Practical	Written			
Topic: Connective tissue histology		**Number of competencies: (2)**			**Number of procedures for certification: (NIL)**				
AN66.1	Describe & identify various types of connective tissue with functional correlation	K/S	SH	Y	Lecture, Practical	Written/ skill assessment			Physiology
AN66.2	Describe the ultrastructure of connective tissue	K	KH	N	Lecture, Practical	Written		Pathology	
Topic: Muscle histology		**Number of competencies: (3)**			**Number of procedures for certification: (NIL)**				

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN67.1	Describe & identify various types of muscle under the microscope	K/S	SH	Y	Lecture, Practical	Written/ skill assessment			
AN67.2	Classify muscle and describe the structure-function correlation of the same	K	KH	Y	Lecture, Practical	Written			Physiology
AN67.3	Describe the ultrastructure of muscular tissue	K	KH	N	Lecture, Practical	Written			
Topic: Nervous tissue histology		**Number of competencies: (3)**				**Number of procedures for certification: (NIL)**			
AN68.1	Describe & Identify multipolar & unipolar neuron, ganglia, peripheral nerve	K/S	SH	Y	Lecture, Practical	Written/ skill assessment			
AN68.2	Describe the structure-function correlation of neuron	K	KH	Y	Lecture, Practical	Written			Physiology
AN68.3	Describe the ultrastructure of nervous tissue	K	KH	N	Lecture, Practical	Written			
Topic: Blood Vessels		**Number of competencies: (3)**				**Number of procedures for certification: (NIL)**			
AN69.1	Identify elastic & muscular blood vessels, capillaries under the microscope	K/S	SH	Y	Lecture, Practical	Skill assessment			
AN69.2	Describe the various types and structure-function correlation of blood vessel	K	KH	Y	Lecture, Practical	Written			Physiology
AN69.3	Describe the ultrastructure of blood vessels	K	KH	Y	Lecture, Practical	Written			
Topic: Glands & Lymphoid tissue		**Number of competencies: (2)**				**Number of procedures for certification: (NIL)**			
AN70.1	Identify exocrine gland under the microscope & distinguish between serous, mucous and mixed acini	K/S	SH	Y	Lecture, Practical	Written/ skill assessment		Pathology	
AN70.2	Identify the lymphoid tissue under the microscope & describe microanatomy of lymph node, spleen, thymus, tonsil and correlate the structure with function	K/S	SH	Y	Lecture, Practical	Written/ skill assessment		Pathology	
Topic: Bone & Cartilage		**Number of competencies: (2)**				**Number of procedures for certification: (NIL)**			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN71.1	Identify bone under the microscope; classify various types and describe the structure-function correlation of the same	K/S	SH	Y	Lecture, Practical	Written/ skill assessment		Pathology	
AN71.2	Identify cartilage under the microscope & describe various types and structure- function correlation of the same	K/S	SH	Y	Lecture, Practical	Written/ skill assessment		Pathology	
Topic: Integumentary System		**Number of competencies: (1)**				**Number of procedures for certification: (NIL)**			
AN72.1	Identify the skin and its appendages under the microscope and correlate the structure with function	K/S	SH	Y	Lecture, Practical	Written/ skill assessment			
Topic: Chromosomes		**Number of competencies: (3)**				**Number of procedures for certification: (NIL)**			
AN73.1	Describe the structure of chromosomes with classification	K	KH	Y	Lecture	Written			
AN73.2	Describe technique of karyotyping with its applications	K	KH	Y	Lecture	Written			
AN73.3	Describe the Lyon's hypothesis	K	KH	Y	Lecture	Written			
Topic: Patterns of Inheritance		**Number of competencies: (4)**				**Number of procedures for certification: (NIL)**			
AN74.1	Describe the various modes of inheritance with examples	K	KH	Y	Lecture	Written		General Medicine, Pediatrics	
AN74.2	Draw pedigree charts for the various types of inheritance & give examples of diseases of each mode of inheritance	K	KH	Y	Lecture	Written		General Medicine, Pediatrics	
AN74.3	Describe multifactorial inheritance with examples	K	KH	Y	Lecture	Written		General Medicine	
AN74.4	Describe the genetic basis & clinical features of Achondroplasia, Cystic Fibrosis, Vitamin D resistant rickets, Haemophilia, Duchene's muscular dystrophy & Sickle cell anaemia	K	KH	N	Lecture	Written		General Medicine, Pediatrics	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
Topic: Principle of Genetics, Chromosomal Aberrations & Clinical Genetics		**Number of competencies: (5)**				**Number of procedures for certification: (NIL)**			
AN75.1	Describe the structural and numerical chromosomal aberrations	K	KH	Y	Lecture	Written		Pediatrics	
AN75.2	Explain the terms mosaics and chimeras with example	K	KH	N	Lecture	Written		Pediatrics	
AN75.3	Describe the genetic basis & clinical features of Prader Willi syndrome, Edward syndrome & Patau syndrome	K	KH	N	Lecture	Written		Pediatrics	
AN75.4	Describe genetic basis of variation: polymorphism and mutation	K	KH	Y	Lecture	Written		Pediatrics	
AN75.5	Describe the principles of genetic counselling	K	KH	Y	Lecture	Written		Pediatrics, Obstetrics & Gynaecology	
Topic: Introduction to embryology		**Number of competencies: (2)**				**Number of procedures for certification: (NIL)**			
AN76.1	Describe the stages of human life	K	KH	Y	Lecture	Written			
AN76.2	Explain the terms- phylogeny, ontogeny, trimester, viability	K	KH	Y	Lecture	written			
Topic: Gametogenesis and fertilization		**Number of competencies: (6)**				**Number of procedures for certification: (NIL)**			
AN77.1	Describe the uterine changes occurring during the menstrual cycle	K	KH	Y	Lecture	Written		Obstetrics & Gynaecology	
AN77.2	Describe the synchrony between the ovarian and menstrual cycles	K	KH	Y	Lecture	Written		Obstetrics & Gynaecology	
AN77.3	Describe spermatogenesis and oogenesis along with diagrams	K	KH	Y	Lecture	Written		Obstetrics & Gynaecology	
AN77.4	Describe the stages and consequences of fertilisation	K	KH	Y	Lecture	Written		Obstetrics & Gynaecology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN77.5	Enumerate and describe the anatomical principles underlying contraception	K	KH	Y	Lecture	Written		Obstetrics & Gynaecology	
AN77.6	Describe teratogenic influences; fertility and sterility, surrogate motherhood, social significance of “sex-ratio”.	K	KH	N	Lecture	Written		Obstetrics & Gynaecology	
Topic: Second week of development		**Number of competencies: (5)**				**Number of procedures for certification: (NIL)**			
AN78.1	Describe cleavage and formation of blastocyst	K	KH	Y	Lecture	Written			
AN78.2	Describe the development of trophoblast	K	KH	Y	Lecture	Written			
AN78.3	Describe the process of implantation & common abnormal sites of implantation	K	KH	Y	Lecture	Written		Obstetrics & Gynaecology	
AN78.4	Describe the formation of extra-embryonic mesoderm and coelom, bilaminar disc and prochordal plate	K	KH	Y	Lecture	Written			
AN78.5	Describe in brief abortion; decidual reaction, pregnancy test	K	KH	Y	Lecture	Written		Obstetrics & Gynaecology	
Toic: 3rd to 8th week of development		**Number of competencies: (6)**				**Number of procedures for certification: (NIL)**			
AN79.1	Describe the formation & fate of the primitive streak	K	KH	Y	Lecture	Written			
AN79.2	Describe formation & fate of notochord	K	KH	Y	Lecture	Written			
AN79.3	Describe the process of neurulation	K	KH	Y	Lecture	Written			
AN79.4	Describe the development of somites and intra-embryonic coelom	K	KH	Y	Lecture	Written		Obstetrics & Gynaecology	
AN79.5	Explain embryological basis of congenital malformations, nucleus pulposus, sacrococcygeal teratomas, neural tube defects	K	KH	N	Lecture	Written		Obstetrics & Gynaecology	
AN79.6	Describe the diagnosis of pregnancy in first trimester and role of teratogens, alpha-fetoprotein	K	KH	N	Lecture	Written		Obstetrics & Gynaecology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
Topic: Fetal membranes	**Number of competencies: (7)**				**Number of procedures for certification: (NIL)**				
AN80.1	Describe formation, functions & fate of-chorion: amnion; yolk sac; allantois & decidua	K	KH	Y	Lecture	Written			
AN80.2	Describe formation & structure of umbilical cord	K	KH	Y	Lecture	Written			
AN80.3	Describe formation of placenta, its physiological functions, foetomaternal circulation & placental barrier	K	KH	Y	Lecture	Written		Obstetrics & Gynaecology	
AN80.4	Describe embryological basis of twinning in monozygotic & dizygotic twins	K	KH	Y	Lecture	Written		Obstetrics & Gynaecology	
AN80.5	Describe role of placental hormones in uterine growth & parturition	K	KH	Y	Lecture	Written		Obstetrics & Gynaecology	
AN80.6	Explain embryological basis of estimation of fetal age.	K	KH	N	Lecture	Written		Obstetrics & Gynaecology	
AN80.7	Describe various types of umbilical cord attachments	K	KH	N	Lecture	Written		Obstetrics & Gynaecology	
Topic: Prenatal Diagnosis	**Number of competencies: (3)**				**Number of procedures for certification: (NIL)**				
AN81.1	Describe various methods of prenatal diagnosis	K	KH	Y	Lecture	Written		Obstetrics & Gynaecology	
AN81.2	Describe indications, process and disadvantages of amniocentesis	K	KH	Y	Lecture	Written		Obstetrics & Gynaecology	
AN81.3	Describe indications, process and disadvantages of chorion villus biopsy	K	KH	Y	Lecture	Written		Obstetrics & Gynaecology	
Topic: Ethics in Anatomy	**Number of competencies: (1)**				**Number of procedures for certification: (NIL)**				

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
AN 82.1	Demonstrate respect and follow the correct procedure when handling cadavers and other biologic tissue	S	SH	Y	Group Activity	NIL		AETCOM	
	Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication. **Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently,** **Column F: DOAP session – Demonstrate, Observe, Assess, Perform.** **Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation**								
Integration									
			Physiology						
PY3.1	Describe the structure and functions of a neuron and neuroglia; Discuss Nerve Growth Factor & other growth factors/cytokines	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Human Anatomy
PY3.7	Describe the different types of muscle fibres and their structure	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Human Anatomy
PY3.13	Describe muscular dystrophy: myopathies	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		General Medicine	Human Anatomy
PY4.1	Describe the structure and functions of digestive system	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Human Anatomy
PY5.1	Describe the functional Anatomy of heart including chambers, sounds; and Pacemaker tissue and conducting system.	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Human Anatomy
PY5.6	Describe abnormal ECG, arrythmias, heart block and myocardial Infarction	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		General Medicine	Human Anatomy
PY9.1	Describe and discuss sex determination; sex differentiation and their abnormities and outline psychiatry and practical implication of sex determination.	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Human Anatomy
PY10.1	Describe and discuss the organization of nervous system	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Human Anatomy

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
PY10.2	Describe and discuss the functions and properties of synapse, reflex, receptors	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Human Anatomy
PY10.3	Describe and discuss somatic sensations & sensory tracts	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Human Anatomy
PY10.4	Describe and discuss motor tracts, mechanism of maintenance of tone, control of body movements, posture and equilibrium & vestibular apparatus	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Human Anatomy
PY10.5	Describe and discuss structure and functions of reticular activating system, autonomic nervous system (ANS)	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Human Anatomy
PY10.6	Describe and discuss Spinal cord, its functions, lesion & sensory disturbances	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Human Anatomy
PY10.7	Describe and discuss functions of cerebral cortex, basal ganglia, thalamus, hypothalamus, cerebellum and limbic system and their abnormalities	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Psychiatry	Human Anatomy
PY10.11	Demonstrate the correct clinical examination of the nervous system: Higher functions, Sensory system, motor system, reflexes, Cranial Nerves in a normal volunteer or simulated environment	S	P	Y	DOAP sessions	Skill assessment / Viva voce / OSCE	1 each (total 5)		Human Anatomy
Biochemistry									
BI6.13	Describe the functions of the kidney, liver, thyroid and adrenal glands .	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Pathology, General Medicine	Physiology, Human Anatomy
BI6.14	Describe the tests that are commonly done in clinical practice to assess the functions of these organs (kidney, liver, thyroid and adrenal glands).	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Pathology, General Medicine	Physiology, Human Anatomy
BI6.15	Describe the abnormalities of kidney, liver, thyroid and adrenal glands	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Pathology, General Medicine	Physiology, Human Anatomy
Pathology									

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
PA28.10	Describe the etiology, pathogenesis, pathology, laboratory findings, distinguishing features progression and complications of acute and chronic pyelonephritis and reflux nephropathy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy, General Surgery	
PA31.1	Classify and describe the types, etiology, pathogenesis, pathology and hormonal dependency of benign breast disease	K	KH	Y	Lecture, Small group	Written/ Viva voce		Human Anatomy, General Surgery	
PA32.1	Enumerate, classify and describe the etiology, pathogenesis, pathology and iodine dependency of thyroid swellings	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy Physiology, General Medicine, General Surgery	
PA32.9	Describe the etiology, pathogenesis, manifestations, laboratory and morphologic features of adrenal neoplasms	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy, Physiology, General Medicine, General Surgery	
PA33.1	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of osteomyelitis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy, Orthopedics	Microbiology
Forensic Medicine & Toxicology									
FM2.28	Describe and discuss signs of intrauterine death, signs of live birth, viability of foetus, age determination of foetus, DOAP session of ossification centres, Hydrostatic test, Sudden infants death syndrome and Munchausen's syndrome by proxy.	K	KH	Y	Lectures,Small group discussion, Autopsy, DOAP session	Written/Viva voce/ OSCE		Pediatrics, Human Anatomy	
FM3.1	Identification Define and describe Corpus Delicti, establishment of identity of living persons including race, Sex, religion, complexion, stature, age determination using morphology, teeth-eruption, decay, bite marks, bones-ossification centres, medico-legal aspects of age.	K	KH	Y	Lectures,Small group discussion, Bedside clinic, DOAP session	Written/ Viva voce/skill assessment		Human Anatomy	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
			Anesthesiology						
AS4.2	Describe the Anatomy of the airway and its implications for general anaesthesia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy	
AS5.2	Describe the correlative Anatomy of the brachial plexus, subarachnoid and epidural spaces	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy	
AS5.3	Observe and describe the principles and steps/ techniques involved in peripheral nerve blocks	S	KH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce		Human Anatomy	
AS8.1	Describe the anatomical correlates and physiologic principles of pain	K	KH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce		Human Anatomy Physiology	
			ENT						
EN1.1	Describe the Human Anatomy & physiology of ear, nose, throat, head & neck.	K	KH	Y	Lecture, Small group discission, DOAP session	Written/ Viva voce/Skill assessment		Human Anatomy	
			Ophthalmology						
OP2.1	Enumerate the causes, describe and discuss the aetiology, clinical presentations and diagnostic features of common conditions of the lid and adnexa including Hordeolum externum/ internum, blepharitis, preseptal cellulitis, dacryocystitis, hemangioma, dermoid, ptosis, entropion, lid lag, lagopthalmos	K	KH	Y	Lecture,Small group discussion	Written/ Viva voce		Human Anatomy	
OP4.1	Enumerate describe and discuss the types and causes of corneal ulceration	K	KH	Y	Lecture,Small group discussion	Written/ Viva voce		Human Anatomy	
OP6.7	Enumerate and discuss the aetiology, the clinical distinguishing features of various glaucomas associated with shallow and deep anterior chamber. Choose appropriate investigations and treatment for patients with above conditions.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
OP7.1	Describe the surgical anatomy and the metabolism of the lens	K	KH	Y	Lecture,Small group discussion	Written/ Viva voce		Biochemistry, Human Anatomy	
OP8.1	Discuss the aetiology, pathology, clinical features and management of vascular occlusions of the retina	K	KH	Y	Lecture,Small group discussion	Written/ Viva voce		Human Anatomy, Pathology	
Dentistry									
DE1.1	Enumerate the parts of the tooth	K	K	N	Lecture,Small group discussion	Viva voce		Human Anatomy	
DE5.1	Enumerate the parts of the tooth and supporting structures	K	K	N	Lecture, Small group discussion	Viva voce		Human Anatomy	
General Medicine									
IM3.1	Define discuss describe and distinguish community acquired pneumonia, nosocomial pneumonia and aspiration pneumonia	K	K	Y	Lecture, Small Group discussion	short note/ Viva voce		Human Anatomy, Pathology, Microbiology	
IM13.9	Demonstrate in a mannequin the correct technique for performing breast exam, rectal examination and cervical examination and pap smear	S	K	Y	Bedside clinic	Skill assessment/ short case		Human Anatomy	General Surgery
IM17.1	Define and classify headache and describe the presenting features, precipitating factors, aggravating and relieving factors of various kinds of headache	K	KH	Y	Lecture, Small group discussion	short note/ Viva voce		Human Anatomy	
IM18.1	Describe the functional and the vascular anatomy of the brain	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce		Human Anatomy	
IM19.1	Describe the functional anatomy of the locomotor system of the brain	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Human Anatomy, Physiology	
Obstetrics & Gynaecology									

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
OG2.1	Describe and discuss the development and anatomy of the female reproductive tract, relationship to other pelvic organs, applied anatomy as related to Obstetrics and Gynaecology.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce/ Skill assessment		Human Anatomy	
OG4.1	Describe and discuss the basic embryology of fetus , factors influencing fetal growth and development, anatomy and physiology of placenta, and teratogenesis	K	K	Y	Lecture, Small group discussion	Theory		Human Anatomy	
OG14.1	Enumerate and discuss the diameters of maternal pelvis and types	K	KH	Y	Lecture, Small group discussion, Bedside clinic, DOAP session	Written/ Viva voce/ skill assessment		Human Anatomy	
General Surgery									
SU19.1	Describe the etiology and classification of cleft lip and palate	K	KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
SU19.2	Describe the Principles of reconstruction of cleft lip and palate	K	KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
SU22.1	Describe the Applied anatomy, and physiology of thyroid	K	KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
SU22.5	Describe the applied anatomy of parathyroid.	K	KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
SU23.1	Describe the applied anatomy of adrenal glands	K	KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
SU24.1	Describe the clinical features, principles of investigation, prognosis and management of pancreatitis.	K	KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
SU25.1	Describe applied anatomy appropriate investigations for breast disease	K	KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
SU28.2	Describe the clinical features, investigations and principles of management of congenital anomalies of Genitourinary system.	K	KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
SU28.5	Describe the applied anatomy and physiology of esophagus	K	K	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce		Human Anatomy, Physiology	
SU28.7	Describe the applied anatomy and physiology of stomach.	K	KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
SU28.10	Describe the applied anatomy of liver. Describe the Clinical features, Investigations and principles of management of Liver abscess, hydatid disease, Injuries and Tumors of the liver.	K	KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
SU28.11	Describe the applied anatomy of Spleen. Describe the clinical features, Investigations and principles of management of splenic injuries. Describe the Post-splenectomy sepsis- prophylaxis.	K	KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
SU28.12	Describe the applied anatomy of biliary system. Describe the clinical features, investigations and principles of management of diseases of biliary system.	K	KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
SU28.13	Describe the applied anatomy of small and large intestines	K	KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
SU28.16	Describe applied anatomy including congenital anomalies of the rectum and anal canal	K	KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
SU30.2	Describe the applied anatomy, clinical features, investigations and principles of management of Undescended testis.	K	KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
SU30.3	Describe the applied anatomy, clinical features, investigations and principles of management of Epidydimo-orchitis	K	KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
SU30.4	Describe the applied anatomy, clinical features, investigations and principles of management of Varicocele	K	KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
SU30.5	Describe the applied anatomy, clinical features, investigations and principles of management of Hydrocele	K	KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
	Orthopaedics								
OR2.1	Describe and discuss the mechanism of Injury, clinical features, investigations and plan management of fracture of clavicle	K/S	KH/SH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE	1	Human Anatomy	
OR2.2	Describe and discuss the mechanism of Injury, clinical features, investigations and plan management of fractures of proximal humerus	K	K/KH/SH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
OR2.3	Describe and discuss the mechanism of Injury, clinical features, investigations and plan management of supra condylar fracture of humerus	K	KH/SH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
OR2.4	Describe and discuss the mechanism of injury, clinical features, investigations and principles of management of fracture of shaft of humerus and intercondylar fracture humerus with emphasis on neurovasular deficit	K/S	K/KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
OR2.5	Describe and discuss the aetiopathogenesis, clinical features, mechanism of injury, investigation & principles of management of fractures of both bones forearm and Galeazzi and Monteggia injury	K	K/KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
OR2.6	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of fractures of distal radius	K	KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
OR2.7	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of pelvic injuries with emphasis on hemodynamic instability	K	K/KH/SH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
OR2.8	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of spine injuries with emphasisi on mobilisation of the patient	K	K/KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
OR2.9	Describe and discuss the mechanism of injury, Clinical features, investigations and principle of management of acetabular fracture	K	K/KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
OR2.10	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of fractures of proximal femur	K/S/A/C	KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
OR2.11	Describe and discuss the aetiopathogenesis, mechanism of injury, clinical features, investigations and principles of management of (a) Fracture patella (b) Fracture distal femur © Fracture proximal tibia with special focus on neurovascular injury and compartment syndrome	K	K/KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
OR2.12	Describe and discuss the aetiopathogenesis, clinical features, Investigation and principles of management of Fracture shaft of femur in all age groups and the recognition and management of fat embolism as a complication	K	K/KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
OR2.13	Describe and discuss the aetiopathogenesis, clinical features, Investigation and principles of management of: (a) Fracture both bones leg (b) Calcaneus (c) Small bones of foot	K	K/KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
OR2.14	Describe and discuss the aetiopathogenesis, clinical features, Investigation and principles of management of ankle fractures	K/S/C	K/KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Teaching-Learning Methods	Assessment Methods	Number required to certify P	Vertical Integration	Horizontal Integration
OR2.15	Plan and interpret the investigations to diagnose complications of fractures like malunion, non-union, infection, compartmental syndrome	K/S	SH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE	2	Human Anatomy	
OR2.16	Describe and discuss the mechanism of injury, clinical features, investigations and principles of management of open fractures with focus on secondary infection, prevention and management	K	K/KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce/ OSCE		Human Anatomy	
OR11.1	Describe and discuss the aetiopathogenesis, Clinical features, Investigations and principles of management of peripheral nerve injuries in diseases like foot drop, wrist drop, claw hand, palsies of Radial, Ulnar, Median, Lateral Popliteal and Sciatic Nerves	K	K/H	Y	Lecture, Small Group discussion, case discussion	Written/ Viva voce/ OSCE		Human Anatomy	General Medicine, General surgery
OR12.1	Describe and discuss the Clinical features, Investigations and principles of management of Congenital and acquired malformations and deformities of: a. limbs and spine - Scoliosis and spinal bifida b. Congenital dislocation of Hip,Torticollis, c. congenital talipes equino varus	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce/ OSCE		Human Anatomy	
Physical Medicine & Rehabilitation									
PM2.1	Describe the causes of disability in the patient with a cerebrovascular accident	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy	General Medicine
PM3.1	Describe and discuss the clinical features, types, evaluation, diagnosis and management of cerebral palsy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy	Pediatrics
Pediatrics									
PE32.1	Discuss the genetic basis, risk factors, complications, prenatal diagnosis, management and genetic counselling in Down's Syndrome	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy	

PHYSIOLOGY (CODE: PY)

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PHYSIOLOGY									
Topic: General Physiology		**Number of competencies: (09)**				**Number of procedures that require certification : (NIL)**			
PY1.1	Describe the structure and functions of a mammalian cell	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY1.2	Describe and discuss the principles of homeostasis	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY1.3	Describe intercellular communication	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY1.4	Describe apoptosis – programmed cell death	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Pathology	
PY1.5	Describe and discuss transport mechanisms across cell membranes	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY1.6	Describe the fluid compartments of the body, its ionic composition & measurements	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Biochemistry
PY1.7	Describe the concept of pH & Buffer systems in the body	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Biochemistry
PY1.8	Describe and discuss the molecular basis of resting membrane potential and action potential in excitable tissue	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY1.9	Demonstrate the ability to describe and discuss the methods used to demonstrate the functions of the cells and its products, its communications and their applications in Clinical care and research.	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
Topic: Haematology		**Number of competencies: (13)**				**Number of procedures that require certification: (NIL)**			

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PY2.1	Describe the composition and functions of blood components	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY2.2	Discuss the origin, forms, variations and functions of plasma proteins	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Biochemistry
PY2.3	Describe and discuss the synthesis and functions of Haemoglobin and explain its breakdown. Describe variants of haemoglobin	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Biochemistry
PY2.4	Describe RBC formation (erythropoiesis & its regulation) and its functions	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY2.5	Describe different types of anaemias & Jaundice	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Pathology	Biochemistry
PY2.6	Describe WBC formation (granulopoiesis) and its regulation	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY2.7	Describe the formation of platelets, functions and variations.	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY2.8	Describe the physiological basis of hemostasis and, anticoagulants. Describe bleeding & clotting disorders (Hemophilia, purpura)	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Pathology	
PY2.9	Describe different blood groups and discuss the clinical importance of blood grouping, blood banking and transfusion	K	KH	Y	Lecture, Small group discussion, ECE- Visit to blood bank	Written/Viva voce		Pathology	
PY2.10	Define and classify different types of immunity. Describe the development of immunity and its regulation	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY2.11	Estimate Hb, RBC, TLC, RBC indices, DLC, Blood groups, BT/CT	S	SH	Y	DOAP sessions	Practical/OSPE/Viva voce		Pathology	
PY2.12	Describe test for ESR, Osmotic fragility, Hematocrit. Note the findings and interpret the test results etc	K	KH	Y	Demonstration	Written /Viva voce		Pathology	

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PY2.13	Describe steps for reticulocyte and platelet count	K	KH	Y	Demonstration sessions	Written /Viva voce		Pathology	
Topic: Nerve and Muscle Physiology		**Number of competencies: (18)**				**Number of procedures that require certification: (NIL)**			
PY3.1	Describe the structure and functions of a neuron and neuroglia; Discuss Nerve Growth Factor & other growth factors/cytokines	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Human Anatomy
PY3.2	Describe the types, functions & properties of nerve fibers	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY3.3	Describe the degeneration and regeneration in peripheral nerves	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		General Medicine	
PY3.4	Describe the structure of neuro-muscular junction and transmission of impulses	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Anaesthesiology	
PY3.5	Discuss the action of neuro-muscular blocking agents	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Anaesthesiology, Pharmacology	
PY3.6	Describe the pathophysiology of Myasthenia gravis	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Pathology	
PY3.7	Describe the different types of muscle fibres and their structure	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Human Anatomy
PY3.8	Describe action potential and its properties in different muscle types (skeletal & smooth)	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY3.9	Describe the molecular basis of muscle contraction in skeletal and in smooth muscles	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY3.10	Describe the mode of muscle contraction (isometric and isotonic)	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY3.11	Explain energy source and muscle metabolism	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Biochemistry

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PY3.12	Explain the gradation of muscular activity	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		General Medicine	
PY3.13	Describe muscular dystrophy: myopathies	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		General Medicine	Human Anatomy
PY3.14	Perform Ergography	S	SH	Y	DOAP sessions	Practical/OSPE/Viva voce			
PY3.15	Demonstrate effect of mild, moderate and severe exercise and record changes in cardiorespiratory parameters	S	SH	Y	DOAP sessions	Practical/OSPE/Viva voce			
PY3.16	Demonstrate Harvard Step test and describe the impact on induced physiologic parameters in a simulated environment	S	SH	Y	DOAP sessions	Practical/OSPE/Viva voce			
PY3.17	Describe Strength-duration curve	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY3.18	Observe with Computer assisted learning (i) amphibian nerve - muscle experiments (ii) amphibian cardiac experiments	S	KH	Y	Demonstration, Computer assisted learning methods	Practical / Viva voce			
Topic: Gastro-intestinal Physiology		**Number of competencies: (10)**				**Number of procedures that require certification: (NIL)**			
PY4.1	Describe the structure and functions of digestive system	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Human Anatomy
PY4.2	Describe the composition, mechanism of secretion, functions, and regulation of saliva, gastric, pancreatic, intestinal juices and bile secretion	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Biochemistry
PY4.3	Describe GIT movements, regulation and functions. Describe defecation reflex. Explain role of dietary fibre.	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY4.4	Describe the physiology of digestion and absorption of nutrients	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Biochemistry

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PY4.5	Describe the source of GIT hormones, their regulation and functions	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY4.6	Describe the Gut-Brain Axis	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY4.7	Describe & discuss the structure and functions of liver and gall bladder	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Biochemistry
PY4.8	Describe & discuss gastric function tests, pancreatic exocrine function tests & liver function tests	K	KH	Y	Lecture, Small group discussion, Demonstration Esophageal Manometry & endoscopy	Written/Viva voce			Biochemistry
PY4.9	Discuss the physiology aspects of: peptic ulcer, gastro-oesophageal reflux disease, vomiting, diarrhoea, constipation, Adynamic ileus, Hirschsprung's disease	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		General Medicine	Biochemistry
PY4.10	Demonstrate the correct clinical examination of the abdomen in a normal volunteer or simulated environment	S	SH	Y	DOAP session	Skill assessment/ Viva voce/OSCE			
Topic: Cardiovascular Physiology (CVS)		**Number of competencies: (16)**			**Number of procedures that require certification: (03)**				
PY5.1	Describe the functional anatomy of heart including chambers, sounds; and Pacemaker tissue and conducting system.	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Human Anatomy
PY5.2	Describe the properties of cardiac muscle including its morphology, electrical, mechanical and metabolic functions	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY5.3	Discuss the events occurring during the cardiac cycle	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY5.4	Describe generation, conduction of cardiac impulse	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY5.5	Describe the physiology of electrocardiogram (E.C.G), its applications and the cardiac axis	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		General Medicine	

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PY5.6	Describe abnormal ECG, arrythmias, heart block and myocardial Infarction	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		General Medicine	Human Anatomy
PY5.7	Describe and discuss haemodynamics of circulatory system	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY5.8	Describe and discuss local and systemic cardiovascular regulatory mechanisms	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY5.9	Describe the factors affecting heart rate, regulation of cardiac output & blood pressure	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY5.10	Describe & discuss regional circulation including microcirculation, lymphatic circulation, coronary, cerebral, capillary, skin, foetal, pulmonary and splanchnic circulation	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		General Medicine	
PY5.11	Describe the patho-physiology of shock, syncope and heart failure	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY5.12	Record blood pressure & pulse at rest and in different grades of exercise and postures in a volunteer or simulated environment	S	SH	Y	DOAP sessions	Practical/OSPE/ Viva voce	1 each x 3		
PY5.13	Record and interpret normal ECG in a volunteer or simulated environment	S	SH	Y	DOAP sessions	Practical/OSPE/ Viva voce		General Medicine	
PY5.14	Observe cardiovascular autonomic function tests in a volunteer or simulated environment	S	SH	N	DOAP sessions	Skill assessment/ Viva voce			
PY5.15	Demonstrate the correct clinical examination of the cardiovascular system in a normal volunteer or simulated environment	S	SH	Y	DOAP sessions	Practical/OSPE/ Viva voce			
PY5.16	Record Arterial pulse tracing using finger plethysmography in a volunteer or simulated environment	S	SH	N	DOAP sessions, Computer assisted learning methods	Practical/OSPE/ Viva voce		General Medicine	
Topic: Respiratory Physiology		**Number of competencies: (10)**				**Number of procedures that require certification: (01)**			

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PY6.1	Describe the functional anatomy of respiratory tract	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY6.2	Describe the mechanics of normal respiration, pressure changes during ventilation, lung volume and capacities, alveolar surface tension, compliance, airway resistance, ventilation, V/P ratio, diffusion capacity of lungs	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY6.3	Describe and discuss the transport of respiratory gases: Oxygen and Carbon dioxide	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY6.4	Describe and discuss the physiology of high altitude and deep sea diving	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY6.5	Describe and discuss the principles of artificial respiration, oxygen therapy, acclimatization and decompression sickness.	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY6.6	Describe and discuss the pathophysiology of dyspnoea, hypoxia, cyanosis asphyxia; drowning, periodic breathing	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY6.7	Describe and discuss lung function tests & their clinical significance	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY6.8	Demonstrate the correct technique to perform & interpret Spirometry	S	SH	Y	DOAP sessions	Skill assessment/ Viva voce		Respiratory Medicine	
PY6.9	Demonstrate the correct clinical examination of the respiratory system in a normal volunteer or simulated environment	S	P	Y	DOAP sessions	Skill assessment/ Viva voce/OSCE	1		
PY6.10	Demonstrate the correct technique to perform measurement of peak expiratory flow rate in a normal volunteer or simulated environment	S	SH	Y	DOAP sessions	Practical/OSPE/ Viva voce			
Topic: Renal Physiology		**Number of competencies: (09)**			**Number of procedures that require certification: (NIL)**				
PY7.1	Describe structure and function of kidney	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY7.2	Describe the structure and functions of juxta glomerular apparatus and role of renin-angiotensin system	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PY7.3	Describe the mechanism of urine formation involving processes of filtration, tubular reabsorption & secretion; concentration and diluting mechanism	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY7.4	Describe & discuss the significance & implication of Renal clearance	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY7.5	Describe the renal regulation of fluid and electrolytes & acid-base balance	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY7.6	Describe the innervations of urinary bladder, physiology of micturition and its abnormalities	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY7.7	Describe artificial kidney, dialysis and renal transplantation	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		General Medicine	
PY7.8	Describe & discuss Renal Function Tests	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Biochemistry
PY7.9	Describe cystometry and discuss the normal cystometrogram	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
Topic: Endocrine Physiology		**Number of competencies: (06)**			**Number of procedures that require certification : (NIL)**				
PY8.1	Describe the physiology of bone and calcium metabolism	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY8.2	Describe the synthesis, secretion, transport, physiological actions, regulation and effect of altered (hypo and hyper) secretion of pituitary gland, thyroid gland, parathyroid gland, adrenal gland, pancreas and hypothalamus	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY8.3	Describe the physiology of Thymus & Pineal Gland	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY8.4	Describe function tests: Thyroid gland; Adrenal cortex, Adrenal medulla and pancreas	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Biochemistry

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PY8.5	Describe the metabolic and endocrine consequences of obesity & metabolic syndrome, Stress response. Outline the psychiatry component pertaining to metabolic syndrome.	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY8.6	Describe & differentiate the mechanism of action of steroid, protein and amine hormones	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
Topic: Reproductive Physiology		**Number of competencies: (12)**				**Number of procedures that require certification: (NIL)**			
PY9.1	Describe and discuss sex determination; sex differentiation and their abnormities and outline psychiatry and practical implication of sex determination.	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Human Anatomy
PY9.2	Describe and discuss puberty: onset, progression, stages; early and delayed puberty and outline adolescent clinical and psychological association.	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY9.3	Describe male reproductive system: functions of testis and control of spermatogenesis & factors modifying it and outline its association with psychiatric illness	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY9.4	Describe female reproductive system: (a) functions of ovary and its control; (b) menstrual cycle - hormonal, uterine and ovarian changes	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY9.5	Describe and discuss the physiological effects of sex hormones	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY9.6	Enumerate the contraceptive methods for male and female. Discuss their advantages & disadvantages	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Obstetrics & Gynaecology, Community Medicine	
PY9.7	Describe and discuss the effects of removal of gonads on physiological functions	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PY9.8	Describe and discuss the physiology of pregnancy, parturition & lactation and outline the psychology and psychiatry-disorders associated with it.	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Obstetrics & Gynaecology	
PY9.9	Interpret a normal semen analysis report including (a) sperm count, (b) sperm morphology and (c) sperm motility, as per WHO guidelines and discuss the results	K	KH	Y	Lecture, Small group discussion	OSPE/Viva voce			
PY9.10	Discuss the physiological basis of various pregnancy tests	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Obstetrics & Gynaecology	
PY9.11	Discuss the hormonal changes and their effects during perimenopause and menopause	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Obstetrics & Gynaecology	
PY9.12	Discuss the common causes of infertility in a couple and role of IVF in managing a case of infertility.	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Obstetrics & Gynaecology	
Topic: Neurophysiology		**Number of competencies: (20)**				**Number of procedures that require certification: (09)**			
PY10.1	Describe and discuss the organization of nervous system	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Human Anatomy
PY10.2	Describe and discuss the functions and properties of synapse, reflex, receptors	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Human Anatomy
PY10.3	Describe and discuss somatic sensations & sensory tracts	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Human Anatomy
PY10.4	Describe and discuss motor tracts, mechanism of maintenance of tone, control of body movements, posture and equilibrium & vestibular apparatus	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Human Anatomy
PY10.5	Describe and discuss structure and functions of reticular activating system, autonomic nervous system (ANS)	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Human Anatomy
PY10.6	Describe and discuss Spinal cord, its functions, lesion & sensory disturbances	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Human Anatomy

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PY10.7	Describe and discuss functions of cerebral cortex, basal ganglia, thalamus, hypothalamus, cerebellum and limbic system and their abnormalities	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Psychiatry	Human Anatomy
PY10.8	Describe and discuss behavioural and EEG characteristics during sleep and mechanism responsible for its production	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Psychiatry	
PY10.9	Describe and discuss the physiological basis of memory, learning and speech	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Psychiatry	
PY10.10	Describe and discuss chemical transmission in the nervous system. (Outline the psychiatry element).	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY10.11	Demonstrate the correct clinical examination of the nervous system: Higher functions, sensory system, motor system, reflexes, cranial nerves in a normal volunteer or simulated environment	S	P	Y	DOAP sessions	Skill assessment/ Viva voce/OSCE	1 each (total 5)		Human Anatomy
PY10.12	Identify normal EEG forms	S	S	Y	Small group teaching	OSPE/Viva voce		Psychiatry	
PY10.13	Describe and discuss perception of smell and taste sensation	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		ENT	
PY10.14	Describe and discuss patho-physiology of altered smell and taste sensation	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		ENT	
PY10.15	Describe and discuss functional anatomy of ear and auditory pathways & physiology of hearing	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		ENT	
PY10.16	Describe and discuss pathophysiology of deafness. Describe hearing tests	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		ENT	
PY10.17	Describe and discuss functional anatomy of eye, physiology of image formation, physiology of vision including colour vision, refractive errors, colour blindness, physiology of pupil and light reflex	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Ophthalmology	

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PY10.18	Describe and discuss the physiological basis of lesion in visual pathway	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Ophthalmology	
PY10.19	Describe and discuss auditory & visual evoke potentials	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Ophthalmology	
PY10.20	Demonstrate (i) Testing of visual acuity, colour and field of vision and (ii) hearing (iii) Testing for smell and (iv) taste sensation in volunteer/ simulated environment	S	P	Y	DOAP sessions	Skill assessment/ Viva voce	1 each (total 4)	ENT, Ophthalmology	
Topic: Integrated Physiology		**Number of competencies: (14)**				**Number of procedures that require certification: (NIL)**			
PY11.1	Describe and discuss mechanism of temperature regulation	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY11.2	Describe and discuss adaptation to altered temperature (heat and cold)	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY11.3	Describe and discuss mechanism of fever, cold injuries and heat stroke	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY11.4	Describe and discuss cardio-respiratory and metabolic adjustments during exercise; physical training effects	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY11.5	Describe and discuss physiological consequences of sedentary lifestyle	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY11.6	Describe physiology of Infancy	K	KH	N	Lecture, Small group discussion	Written/Viva voce		Pediatrics	
PY11.7	Describe and discuss physiology of aging; free radicals and antioxidants	K	KH	N	Lecture, Small group discussion	Written/Viva voce			
PY11.8	Discuss & compare cardio-respiratory changes in exercise (isometric and isotonic) with that in the resting state and under different environmental conditions (heat and cold)	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PY11.9	Interpret growth charts	K	KH	N	Small group teaching	Practical/OSPE/ Viva voce		Pediatrics	
PY11.10	Interpret anthropometric assessment of infants	K	KH	N	Small group teaching	Practical/OSPE/ Viva voce		Pediatrics	
PY11.11	Discuss the concept, criteria for diagnosis of Brain death and its implications	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
PY11.12	Discuss the physiological effects of meditation	K	KH	N	Lecture, Small group discussion	Written/Viva voce			
PY11.13	Obtain history and perform general examination in the volunteer / simulated environment	S	SH	Y	DOAP sessions	Skill assessment/ Viva voce			
PY11.14	Demonstrate Basic Life Support in a simulated environment	S	SH	Y	DOAP sessions	OSCE		General Medicine, Anaesthesiology	
	Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication. **Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently,** **Column F: DOAP session – Demonstrate, Observe, Assess, Perform.** **Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation**								
Integration									
	Human Anatomy								
AN3.1	Classify muscle tissue according to structure & action	K	KH	Y	Lecture	Written/ Viva voce			Physiology
AN5.1	Differentiate between blood vascular and lymphatic system	K	KH	Y	Lecture	Written/ Viva voce			Physiology
AN5.2	Differentiate between pulmonary and systemic circulation	K	KH	Y	Lecture	Written/ Viva voce			Physiology
AN5.6	Describe the concept of anastomoses and collateral circulation with significance of end-arteries	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	Physiology
AN5.7	Explain function of meta-arterioles, precapillary sphincters, arterio-venous anastomoses	K	KH	N	Lecture	Written			Physiology
AN5.8	Define thrombosis, infarction & aneurysm	K	KH	N	Lecture	Written		Pathology	Physiology

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
AN7.2	List components of nervous tissue and their functions	K	KH	Y	Lecture	Written/ Viva voce			Physiology
AN7.3	Describe parts of a neuron and classify them based on number of neurites, size & function	K	KH	Y	Lecture	Written/ Viva voce			Physiology
AN7.5	Describe principles of sensory and motor innervation of muscles	K	KH	N	Lecture	Written		General Medicine	Physiology
AN7.7	Describe various types of synapse	K	KH	N	Lecture	Written			Physiology
AN21.9	Describe & demonstrate mechanics and types of respiration	K/S	SH	Y	Practical, Lecture, Small group dicussion, DOAP session	Written/Viva voce/ skill assessment			Physiology
AN22.2	Describe & demonstrate external and internal features of each chamber of heart	K/S	SH	Y	Practical, Lecture, Small group dicussion, DOAP session	Written/Viva voce/ skill assessment			Physiology
AN22.3	Describe & demonstrate origin, course and branches of coronary arteries	K/S	SH	Y	Practical, Lecture, Small group dicussion, DOAP session	Written/Viva voce/ skill assessment			Physiology
AN22.4	Describe anatomical basis of ischaemic heart disease	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	Physiology
AN22.7	Mention the parts, position and arterial supply of the conducting system of heart	K	KH	Y	Lecture	Written		General Medicine	Physiology
AN24.1	Mention the blood supply, lymphatic drainage and nerve supply of pleura, extent of pleura and describe the pleural recesses and their applied anatomy	K	KH	Y	Practical, Lecture	Written/ Viva voce		General Medicine	Physiology
AN24.2	Identify side, external features and relations of structures which form root of lung & bronchial tree and their clinical correlate	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		General Medicine	Physiology
AN24.3	Describe a bronchopulmonary segment	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	Physiology

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
AN25.3	Describe fetal circulation and changes occurring at birth	K	KH	Y	Lecture	Written		General Medicine	Physiology
AN25.4	Describe embryological basis of: 1) atrial septal defect, 2) ventricular septal defect, 3) Fallot's tetralogy & 4) tracheo-oesophageal fistula	K	KH	Y	Lecture	Written/ Viva voce		General Medicine, Pediatrics	Physiology
AN25.5	Describe developmental basis of congenital anomalies, transposition of great vessels, dextrocardia, patent ductus arteriosus and coarctation of aorta	K	KH	Y	Lecture	Written/ Viva voce		General Medicine, Pediatrics	Physiology
AN25.9	Demonstrate surface marking of lines of pleural reflection, Lung borders and fissures, Trachea, Heart borders, Apex beat & Surface projection of valves of heart	K/S	SH	Y	Practical	Viva voce/ skill assessment		General Medicine, Pediatrics	Physiology
AN56.2	Describe circulation of CSF with its applied anatomy	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	Physiology
AN57.4	Enumerate ascending & descending tracts at mid thoracic level of spinal cord	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	Physiology
AN57.5	Describe anatomical basis of syringomyelia	K	KH	N	Lecture	Written		General Medicine	Physiology
AN58.3	Enumerate cranial nerve nuclei in medulla oblongata with their functional group	K	KH	Y	Lecture	Written/ Viva voce			Physiology
AN58.4	Describe anatomical basis & effects of medial & lateral medullary syndrome	K	KH	N	Lecture	Written		General Medicine	Physiology
AN59.1	Identify external features of pons	K/S	SH	Y	Lecture, DOAP session	Written/ Viva voce/ skill assessment			Physiology
AN60.3	Describe anatomical basis of cerebellar dysfunction	K	KH	N	Lecture	Written		General Medicine	Physiology
AN61.3	Describe anatomical basis & effects of Benedikt's and Weber's syndromme	K	KH	N	Lecture	Written		General Medicine	Physiology
AN62.2	Describe & demonstrate surfaces, sulci, gyri, poles, & functional areas of cerebral hemisphere	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		General Medicine	Physiology

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
AN62.3	Describe the white matter of cerebrum	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	Physiology
AN62.4	Enumerate parts & major connections of basal ganglia & limbic lobe	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	Physiology
AN62.5	Describe boundaries, parts, gross relations, major nuclei and connections of dorsal thalamus, hypothalamus, epithalamus, metathalamus and subthalamus	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	Physiology
AN62.6	Describe & identify formation, branches & major areas of distribution of circle of Willis	K/S	SH	Y	Practical, Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		General Medicine	Physiology
AN63.1	Describe & demonstrate parts, boundaries & features of IIIrd, IVth & lateral ventricle	K/S	SH	Y	Practical, Lecture, Small group dicussion, DOAP session	Written/ Viva voce/ skill assessment			Physiology
AN63.2	Describe anatomical basis of congenital hydrocephalus	K	KH	N	Lecture	Written		Pediatrics	Physiology
AN66.1	Describe & identify various types of connective tissue with functional correlation	K/S	SH	Y	Lecture, Practical	Written/ skill assessment			Physiology
AN67.2	Classify muscle and describe the structure-function correlation of the same	K	KH	Y	Lecture, Practical	Written			Physiology
AN68.2	Describe the structure-function correlation of neuron	K	KH	Y	Lecture, Practical	Written			Physiology
AN69.2	Describe the various types and structure-function correlation of blood vessel	K	KH	Y	Lecture, Practical	Written			Physiology
					Biochemistry				
BI1.1	Describe the molecular and functional organization of a cell and its sub-cellular components.	K	KH	Y	Lecture, Small group discussions	Written assessment and Viva voce			Physiology

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
BI3.7	Describe the common poisons that inhibit crucial enzymes of carbohydrate metabolism (eg; fluoride, arsenate)	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Physiology
BI5.2	Describe and discuss functions of proteins and structure-function relationships in relevant areas eg, hemoglobin and selected hemoglobinopathies	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, General Medicine	Physiology
BI6.3	Describe the common disorders associated with nucleotide metabolism.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Physiology
BI6.7	Describe the processes involved in maintenance of normal pH, water & electrolyte balance of body fluids and the derangements associated with these.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Physiology
BI6.9	Describe the functions of various minerals in the body, their metabolism and homeostasis.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Physiology
BI6.11	Describe the functions of haem in the body and describe the processes involved in its metabolism and describe porphyrin metabolism.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, General Medicine	Physiology
BI6.12	Describe the major types of haemoglobin and its derivatives found in the body and their physiological/ pathological relevance.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, General Medicine	Physiology
BI6.13	Describe the functions of the kidney, liver, thyroid and adrenal glands.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, General Medicine	Physiology, Human Anatomy
BI6.14	Describe the tests that are commonly done in clinical practice to assess the functions of these organs (kidney, liver, thyroid and adrenal glands).	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, General Medicine	Physiology, Human Anatomy
BI6.15	Describe the abnormalities of kidney, liver, thyroid and adrenal glands.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, General Medicine	Physiology, Human Anatomy
BI10.4	Describe & discuss innate and adaptive immune responses, self/non-self recognition and the central role of T-helper cells in immune responses.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Pathology	Physiology
BI11.4	Perform urine analysis to estimate and determine normal and abnormal constituents	S	P	Y	DOAP session	Skill assessment	1	General Medicine	Physiology

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
				Pathology					
PA26.3	Define and describe the etiology, types, pathogenesis, stages, morphology and complications and evaluation of Obstructive airway disease (OAD) and bronchiectasis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	Microbiology
PA27.3	Describe the etiology, types, stages pathophysiology pathology and complications of heart failure	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Physiology	
PA27.8	Interpret abnormalities in cardiac function testing in acute coronary syndromes	S	SH	Y	DOAP session	Skill Assessment		Physiology, General Medicine	
PA27.9	Classify and describe the etiology, types, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of cardiomyopathies	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Physiology	
PA28.5	Define and classify glomerular diseases. Enumerate and describe the etiology, pathogenesis, mechanisms of glomerular injury, pathology, distinguishing features and clinical manifestations of glomerulonephritis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	
PA32.1	Enumerate, classify and describe the etiology, pathogenesis, pathology and iodine dependency of thyroid swellings	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy, Physiology, General Medicine, General Surgery	
PA32.2	Describe the etiology, cause, iodine dependency, pathogenesis, manifestations, laboratory and imaging features and course of thryotoxicosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	
PA32.3	Describe the etiology, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis/ hypothyroidism	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	
PA32.4	Classify and describe the epidemiology, etiology, pathogenesis, pathology, clinical laboratory features, complications and progression of diabetes mellitus	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	
PA32.5	Describe the etiology, genetics, pathogenesis, manifestations, laboratory and morphologic features of hyperparathyroidism	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PA32.7	Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications of adrenal insufficiency	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	
PA32.8	Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications of Cushing's syndrome	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	
PA32.9	Describe the etiology, pathogenesis, manifestations, laboratory and morphologic features of adrenal neoplasms	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy, Physiology, General Medicine, General Surgery	
				Pharmacology					
PH1.15	Describe mechanism/s of action, types, doses, side effects, indications and contraindications of skeletal muscle relaxants	K	KH	Y	Lecture	Written/ Viva voce		Anesthesiology, Physiology	
PH1.19	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs which act on CNS, (including anxiolytics, sedatives & hypnotics, antipsychotic, antidepressant drugs, anti-maniacs,opioid agonists and antagonists, drugs used for neurodegenerative disorders, antiepileptics Drugs)	K	KH	Y	Lecture	Written/ Viva voce		Psychiatry, Physiology	
PH1.25	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs acting on blood, like anticoagulants, antiplatelets, fibrinolytics, plasma expanders	K	KH	Y	Lecture	Written/ Viva voce		Physiology, General Medicine	
PH1.26	Describe mechanisms of action, types, doses, side effects, indications and contraindications of the drugs modulating the renin angiotensin and aldosterone system	K	KH	Y	Lecture	Written/ Viva voce		Physiology, General Medicine	
PH1.35	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of drugs used in hematological disorders like: 1.Drugs used in anemias 2.Colony Stimulating factors	K	KH	Y	Lecture	Written/ Viva voce		General Medicine, Physiology	Pharmacology

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
Forensic Medicine & Toxicology									
FM14.7	Demonstrate & identify that a particular stain is blood and identify the species of its origin.	S	KH	Y	Small group discussion, Lecture	Log book/ skill station/ Viva voce		Pathology, Physiology	
FM14.8	Demonstrate the correct technique to perform and identify ABO & Rh blood group of a person.	S	SH	Y	Small group discussion, DOAP session	Log book/ skill station/ Viva voce		Pathology, Physiology	
Anesthesiology									
AS7.3	Observe and describe the management of an unconscious patient	S	KH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce		Physiology	General Medicine
AS7.4	Observe and describe the basic setup process of a ventilator	S	KH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce		Physiology	General Medicine
AS8.1	Describe the anatomical correlates and physiologic principles of pain	K	KH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce		Human Anatomy, Physiology	
AS8.2	Elicit and determine the level, quality and quantity of pain and its tolerance in patient or surrogate	S	KH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce		Physiology	
Ophtalmology									
OP1.1	Describe the physiology of vision.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology	
General Medicine									
IM1.1	Describe and discuss the epidemiology, pathogenesis clinical evolution and course of common causes of heart disease including: rheumatic/ valvular, ischemic, hypertrophic inflammatory.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
IM1.2	Describe and discuss the genetic basis of some forms of heart failure	K	KH	N	Lecture, Small group discussion	Written		Pathology, Physiology	
IM1.3	Describe and discuss the aetiology microbiology pathogenies and clinical evolution of rheumatic fever, criteria, degree of rheumatic activity and rheumatic valvular heart disease and its complications including infective endocarditis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology, Microbiology	
IM1.4	Stage heart failure	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM1.5	Describe discuss and differentiate the processes involved in R Vs L heart failure, systolic vs diastolic failure	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM1.6	Describe and discuss the compensatory mechanisms involved in heart failure including cardiac remodelling and neurohormonal adaptations	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM1.7	Enumerate, describe and discuss the factors that exacerbate heart failure including ischemia, arrythmias anemia, thyrotoxicosis, dietary factors drugs etc.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM1.8	Describe and discuss the pathogenesis and development of common arrythmias involved in heart failure particularly atrial fibrillation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM2.1	Discuss and describe the epidemiology, antecedents and risk factors for atherosclerosis and ischemic heart disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology Community Medicine	
IM2.2	Discuss the aetiology of risk factors both modifiable and non modifiable of atherosclerosis and IHD	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM2.3	Discuss and describe the lipid cycle and the role of dyslipidemia in the pathogenesis of atherosclerosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Biochemistry	
IM2.4	Discuss and describe the pathogenesis, natural history, evolution and complications of atherosclerosis and IHD	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
IM5.1	Describe and discuss the physiologic and biochemical basis of hyperbilirubinemia	K	K	Y	Lecture, Small group discussion	Written/Viva voce		Pathology, Physiology	
IM5.2	Describe and discuss the aetiology and pathophysiology of liver injury	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM8.1	Describe and discuss the epidemiology, aetiology and the prevalence of primary and secondary hypertension	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM8.2	Describe and discuss the pathophysiology of hypertension	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM11.22	Enumerate the causes of hypoglycaemia and describe the counter hormone response and the initial approach and treatment.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM12.1	Describe the epidemiology and pathogenesis of hypothyroidism and hyperthyroidism including the influence of iodine deficiency and autoimmunity in the pathogenesis of thyroid disease	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM12.3	Describe and discuss the physiology of the hypothalamopituitary - thyroid axis, principles of thyroid function testing and alterations in physiologic function	K	K	Y	Lecture, Small group discussion	short notes		Pathology, Physiology	
IM15.3	Describe and discuss the physiologic effects of acute blood and volume loss	K	K	Y	Lecture, Small group discussions	short note/ Viva voce		Pathology, Physiology	General Surgery
IM18.6	Distinguish the lesion based on upper vs lower motor neuron, side, site and most probable nature of the lesion	K/S	SH	Y	Bedside clinic, DOAP session	Skill Assessment		Physiology	
IM18.7	Describe the clinical features and distinguish, based on clinical examination, the various disorders of speech	K/S	SH	N	Bedside clinic, DOAP session	Skill Assessment		Physiology	
IM18.8	Describe and distinguish, based on the clinical presentation, the types of bladder dysfunction seen in CNS disease	K	KH	Y	Small group discussion, Bedside clinic	Written/ Viva voce		Physiology	
IM19.1	Describe the functional anatomy of the locomotor system of the brain	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Human Anatomy, Physiology	

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
IM22.1	Enumerate the causes of hypercalcemia and distinguish the features of PTH vs non PTH mediated hypercalcemia	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM22.9	Enumerate the causes and describe the clinical and laboratory features of metabolic acidosis	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Physiology	
IM22.10	Enumerate the causes of describe the clinical and laboratory features of metabolic alkalosis	K	KH	N	Lecture, small group discussion	Written/ Viva voce		Physiology	
IM22.11	Enumerate the causes and describe the clinical and laboratory features of respiratory acidosis	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Physiology	
IM22.12	Enumerate the causes and describe the clinical and laboratory features of respiratory alkalosis	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Physiology	
IM22.13	Identify the underlying acid based disorder based on an ABG report and clinical situation	S	KH	N	Lecture, Small group discussion	Written/ Viva voce		Physiology	
IM23.1	Discuss and describe the methods of nutritional assessment in an adult and calculation of caloric requirements during illnesses	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Biochemistry	Pediatrics
IM23.2	Discuss and describe the causes and consequences of protein caloric malnutrition in the hospital	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Biochemistry	Pediatrics
IM23.3	Discuss and describe the aetiology, causes, clinical manifestations, complications, diagnosis and management of common vitamin deficiencies	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Biochemistry	Pediatrics
IM23.4	Enumerate the indications for enteral and parenteral nutrition in critically ill patients	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Biochemistry	Pediatrics
IM24.22	Describe and discuss the aetiopathogenesis, clinical presentation, complications, assessment and management of nutritional disorders in the elderly	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Biochemistry	
	Obstetrics & Gynaecology								
OG3.1	Describe the physiology of ovulation, menstruation, fertilization, implantation and gametogenesis	K	K	Y	Lecture, seminars	Theory		Physiology	

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
OG7.1	Describe and discuss the changes in the genital tract, cardiovascular system, respiratory, haematology, renal and gastrointestinal systems in pregnancy	K	KH	Y	Lecture, seminars	Theory		Physiology	
				Pediatrics					
PE7.2	Explain the physiology of lactation	K	KH	Y	Lecture, small group discussion	Written/ Viva voce		Physiology	
PE7.3	Describe the composition and types of breast milk and discuss the differences between cow's milk and human milk	K	KH	Y	Lecture, debate	Written/ Viva voce		Physiology	
PE10.1	Define, describe the etio-pathogenesis, classify including WHO classification, clinical features, complication and management of severe Acute Malnourishment and Moderate Acute Malnutrition	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology Biochemistry	
PE10.2	Outline the clinical approach to a child with SAM and MAM	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Biochemistry	
PE10.3	Assessment of a patient with SAM and MAM, diagnosis, classification and planning management including hospital and community based intervention, rehabilitation and prevention	S	SH	Y	Bed side clinics, Skill Lab	Skill station		Physiology, Biochemistry	
PE11.1	Describe the common etiology, clinical features and management of Obesity in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Biochemistry, Pathology	
PE11.2	Discuss the risk approach for obesity and discuss the prevention strategies	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
PE12.7	Describe the causes, clinical features, diagnosis and management of Deficiency / excess of Vitamin D (Rickets and Hypervitaminosis D	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, Physiology, Pathology	
PE12.8	Identify the clinical features of dietary deficiency of Vitamin D	S	P	Y	Bedside clinics, Skills lab	Document in log book	3	Biochemistry Physiology Pathology	

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PE12.9	Assess patients with Vitamin D deficiency, diagnose, classify and plan management	S	SH	Y	Bed side clinics	Document in log book		Biochemistry, Physiology, Pathology	
PE12.13	Discuss the RDA, dietary sources of Vitamin K and their role in health and disease	K	K	N	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, Physiology, Pathology	
PE12.14	Describe the causes, clinical features, diagnosis, management and prevention of of Deficiency of Vitamin K	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, Physiology, Pathology	
PE23.1	Discuss the Hemodynamic changes, clinical presentation, complications and management of Acyanotic Heart Diseases –VSD, ASD and PDA	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology Pathology	
PE23.2	Discuss the Hemodynamic changes, clinical presentation, complications and management of Cyanotic Heart Diseases – Fallot's Physiology	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology Pathology	
PE23.3	Discuss the etio-pathogenesis, clinical presentation and management of cardiac failure in infant and children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology Pathology	
PE23.4	Discuss the etio-pathogenesis, clinical presentation and management of Acute Rheumatic Fever in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology Pathology	
PE23.5	Discuss the clinical features, complications, diagnosis, management and prevention of Acute Rheumatic Fever	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology Pathology	
PE23.6	Discuss the etio-pathogenesis and clinical features and management of Infective endocarditis in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology, Microbiology	
PE29.1	Discuss the etio-pathogenesis, Clinical features, classification and approach to a child with anaemia	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Pathology, Physiology	
PE29.2	Discuss the etio-pathogenesis, clinical features and management of Iron Deficiency anaemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PE29.3	Discuss the etiopathogenesis, Clinical features and management of VIT B12, Folate deficiency anaemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
PE29.4	Discuss the etio-pathogenesis, clinical features and management of Hemolytic anemia, Thalassemia Major, Sickle cell anaemia, Hereditary spherocytosis, Auto-immune hemolytic anaemia and hemolytic uremic syndrome	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology Physiology	
General Surgery									
SU1.1	Describe basic concepts of homeostasis, enumerate the metabolic changes in injury and their mediators	K	KH	Y	Lecture, Bed side clinic and Small group discussion	Written/ Viva voce		Physiology, Biochemistry	
SU2.1	Describe Pathophysiology of shock. Types of shock. Principles of resuscitation including fluid replacement and monitoring	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
SU4.1	Elicit, document and present history in a case of Burns and perform physical examination. Describe Pathophysiology of Burns.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology	
SU12.1	Enumerate the causes and consequences of malnutrition in the surgical patient.	K	KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce		Physiology	
SU12.2	Describe and Discuss the methods of estimation and replacement the Fluid and electrolyte requirements in the surgical patient	K	KH	Y	Lecture, Small group discussion, Bedside clinic	Written/ Viva voce		Physiology	
SU28.5	Describe the applied Anatomy and physiology of esophagus	K	K	Y	Lecture, Small group Discussion, Demonstration	Written/ Viva voce		Human Anatomy, Physiology	
Respiratory Medicine									

Number	COMPETENCY The student should be able to:	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
CT2.1	Define and classify obstructive airway disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
CT2.2	Describe and discuss the epidemiology risk factors and evolution of obstructive airway disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
CT2.4	Describe and discuss the physiology and pathophysiology of hypoxia and hypercapneia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
CT2.5	Describe and discuss the genetics of alpha 1 antitrypsin deficiency in emphysema	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
CT2.11	Describe, discuss and interpret pulmonary function tests	S	SH	Y	Bed side clinic, DOAP session	Skill assessment		Physiology, Pathology	

BIOCHEMISTRY (CODE: BI)

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
BIOCHEMISTRY									
Topic: Basic Biochemistry		**Number of competencies: (01)**				**Number of procedures that require certification: (NIL)**			
BI1.1	Describe the molecular and functional organization of a cell and its sub-cellular components.	K	KH	Y	Lecture, Small group discussion	Written assessment/ Viva voce			Physiology
Topic: Enzyme		**Number of competencies: (07)**				**Number of procedures that require certification: (NIL)**			
BI2.1	Explain fundamental concepts of enzyme, isoenzyme, alloenzyme, coenzyme & co-factors. Enumerate the main classes of IUBMB nomenclature.	K	KH	Y	Lecture, case discussion	Written assessment/ Viva voce			
BI2.2	Observe the estimation of SGOT & SGPT	K	K	Y	Demonstration	Viva voce			
BI2.3	Describe and explain the basic principles of enzyme activity	K	KH	Y	Lecture, case discussion	Written/ Viva voce			
BI2.4	Describe and discuss enzyme inhibitors as poisons and drugs and as therapeutic enzymes	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Pathology, General Medicine	
BI2.5	Describe and discuss the clinical utility of various serum enzymes as markers of pathological conditions.	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Pathology, General Medicine	
BI2.6	Discuss use of enzymes in laboratory investigations (Enzyme-based assays)	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, General Medicine	
BI2.7	Interpret laboratory results of enzyme activities & describe the clinical utility of various enzymes as markers of pathological conditions.	K	KH	Y	Lecture, Small group discussion, DOAP sessions	Written/ Viva voce		Pathology, General Medicine	
Topic: Chemistry and Metabolism of Carbohydrates		**Number of competencies: (10)**				**Number of procedures that require certification: (NIL)**			
BI3.1	Discuss and differentiate monosaccharides, di-saccharides and polysaccharides giving examples of main carbohydrates as energy fuel, structural element and storage in the human body	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
BI3.2	Describe the processes involved in digestion and assimilation of carbohydrates and storage.	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
BI3.3	Describe and discuss the digestion and assimilation of carbohydrates from food.	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
BI3.4	Define and differentiate the pathways of carbohydrate metabolism, (glycolysis, gluconeogenesis, glycogen metabolism, HMP shunt).	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		General Medicine	
BI3.5	Describe and discuss the regulation, functions and integration of carbohydrate along with associated diseases/disorders.	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		General Medicine	
BI3.6	Describe and discuss the concept of TCA cycle as a amphibolic pathway and its regulation.	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			
BI3.7	Describe the common poisons that inhibit crucial enzymes of carbohydrate metabolism (eg; fluoride, arsenate)	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Physiology
BI3.8	Discuss and interpret laboratory results of analytes associated with metabolism of carbohydrates.	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Pathology, General Medicine	
BI3.9	Discuss the mechanism and significance of blood glucose regulation in health and disease.	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		General Medicine	
BI3.10	Interpret the results of blood glucose levels and other laboratory investigations related to disorders of carbohydrate metabolism.	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		General Medicine	
Topic: Chemistry and Metabolism of Lipids		**Number of competencies: (07)**				**Number of procedures that require certification: (NIL)**			
BI4.1	Describe and discuss main classes of lipids (Essential/non-essential fatty acids, cholesterol and hormonal steroids, triglycerides, major phospholipids and sphingolipids) relevant to human system and their major functions.	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		General Medicine	
BI4.2	Describe the processes involved in digestion and absorption of dietary lipids and also the key features of their metabolism	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
BI4.3	Explain the regulation of lipoprotein metabolism & associated disorders.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
BI4.4	Describe the structure and functions of lipoproteins, their functions, interrelations & relations with atherosclerosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
BI4.5	Interpret laboratory results of analytes associated with metabolism of lipids	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
BI4.6	Describe the therapeutic uses of prostaglandins and inhibitors of eicosanoid synthesis.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
BI4.7	Interpret laboratory results of analytes associated with metabolism of lipids.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
Topic: Chemistry and Metabolism of Proteins		**Number of competencies: (05)**				**Number of procedures that require certification: (NIL)**			
BI5.1	Describe and discuss structural organization of proteins.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
BI5.2	Describe and discuss functions of proteins and structure-function relationships in relevant areas eg, hemoglobin and selected hemoglobinopathies	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, General Medicine	Physiology
BI5.3	Describe the digestion and absorption of dietary proteins.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	
BI5.4	Describe common disorders associated with protein metabolism.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	
BI5.5	Interpret laboratory results of analytes associated with metabolism of proteins.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
Topic: Metabolism and homeostasis		**Number of competencies: (15)**				**Number of procedures that require certification: (NIL)**			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
BI6.1	Discuss the metabolic processes that take place in specific organs in the body in the fed and fasting states.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
BI6.2	Describe and discuss the metabolic processes in which nucleotides are involved.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
BI6.3	Describe the common disorders associated with nucleotide metabolism.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Physiology
BI6.4	Discuss the laboratory results of analytes associated with gout & Lesch Nyhan syndrome.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
BI6.5	Describe the biochemical role of vitamins in the body and explain the manifestations of their deficiency	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
BI6.6	Describe the biochemical processes involved in generation of energy in cells.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
BI6.7	Describe the processes involved in maintenance of normal pH, water & electrolyte balance of body fluids and the derangements associated with these.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Physiology
BI6.8	Discuss and interpret results of Arterial Blood Gas (ABG) analysis in various disorders.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
BI6.9	Describe the functions of various minerals in the body, their metabolism and homeostasis.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Physiology
BI6.10	Enumerate and describe the disorders associated with mineral metabolism.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
BI6.11	Describe the functions of haem in the body and describe the processes involved in its metabolism and describe porphyrin metabolism.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, General Medicine	Physiology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
BI6.12	Describe the major types of haemoglobin and its derivatives found in the body and their physiological/ pathological relevance.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, General Medicine	Physiology
BI6.13	Describe the functions of the kidney, liver, thyroid and adrenal glands.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, General Medicine	Physiology, Human Anatomy
BI6.14	Describe the tests that are commonly done in clinical practice to assess the functions of these organs (kidney, liver, thyroid and adrenal glands).	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, General Medicine	Physiology, Human Anatomy
BI6.15	Describe the abnormalities of kidney, liver, thyroid and adrenal glands.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, General Medicine	Physiology, Human Anatomy
Topic: Molecular biology		**Number of competencies: (07)**				**Number of procedures that require certification: (NIL)**			
BI7.1	Describe the structure and functions of DNA and RNA and outline the cell cycle.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
BI7.2	Describe the processes involved in replication & repair of DNA and the transcription & translation mechanisms.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
BI7.3	Describe gene mutations and basic mechanism of regulation of gene expression.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	
BI7.4	Describe applications of molecular technologies like recombinant DNA technology, PCR in the diagnosis and treatment of diseases with genetic basis.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics, General Medicine	
BI7.5	Describe the role of xenobiotics in disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
BI7.6	Describe the anti-oxidant defence systems in the body.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
BI7.7	Describe the role of oxidative stress in the pathogenesis of conditions such as cancer, complications of diabetes mellitus and atherosclerosis.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Pathology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
Topic: Nutrition		**Number of competencies: (05)**			**Number of procedures that require certification: (NIL)**				
BI8.1	Discuss the importance of various dietary components and explain importance of dietary fibre.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Pediatrics, Pathology	
BI8.2	Describe the types and causes of protein energy malnutrition and its effects.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Pediatrics, Pathology	
BI8.3	Provide dietary advice for optimal health in childhood and adult, in disease conditions like diabetes mellitus, coronary artery disease and in pregnancy.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
BI8.4	Describe the causes (including dietary habits), effects and health risks associated with being overweight/ obesity.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Pathology	
BI8.5	Summarize the nutritional importance of commonly used items of food including fruits and vegetables.(macro-molecules & its importance)	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, General Medicine, Pediatrics	
Topic: Extracellular Matrix		**Number of competencies: (03)**			**Number of procedures that require certification: (NIL)**				
BI9.1	List the functions and components of the extracellular matrix (ECM).	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
BI9.2	Discuss the involvement of ECM components in health and disease.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
BI9.3	Describe protein targeting & sorting along with its associated disorders.	K	KH	N	Lecture, Small group discussion	Written/ Viva voce			
Topic: Oncogenesis and immunity		**Number of competencies: (05)**			**Number of procedures that require certification: (NIL)**				

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
BI10.1	Describe the cancer initiation, promotion oncogenes & oncogene activation. Also focus on p53 & apoptosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology, General Surgery, Pathology	
BI10.2	Describe various biochemical tumor markers and the biochemical basis of cancer therapy.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology, General Surgery, Pathology	
BI10.3	Describe the cellular and humoral components of the immune system & describe the types and structure of antibody	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology, General Surgery, Pathology	
BI10.4	Describe & discuss innate and adaptive immune responses, self/non-self recognition and the central role of T-helper cells in immune responses.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Pathology	Physiology
BI10.5	Describe antigens and concepts involved in vaccine development.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Pediatrics, Microbiology	
Topic: Biochemical Laboratory Tests		**Number of competencies: (24)**				**Number of procedures that require certification: (05)**			
BI11.1	Describe commonly used laboratory apparatus and equipments, good safe laboratory practice and waste disposal.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
BI11.2	Describe the preparation of buffers and estimation of pH.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
BI11.3	Describe the chemical components of normal urine.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
BI11.4	Perform urine analysis to estimate and determine normal and abnormal constituents	S	P	Y	DOAP session	Skill assessment	1	General Medicine	Physiology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
BI11.5	Describe screening of urine for inborn errors & describe the use of paper chromatography	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
BI11.6	Describe the principles of colorimetry	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
BI11.7	Demonstrate the estimation of serum creatinine and creatinine clearance	S	P	Y	Practical	Skills assessment	1		
BI11.8	Demonstrate estimation of serum proteins, albumin and A:G ratio	S	P	Y	Practical	Skills assessment	1		
BI11.9	Demonstrate the estimation of serum total cholesterol and HDL-cholesterol	S	P	Y	Practical	Skills assessment			
BI11.10	Demonstrate the estimation of triglycerides	S	P	Y	Practical	Skills assessment			
BI11.11	Demonstrate estimation of calcium and phosphorous	S	P	Y	Practical	Skills assessment			
BI11.12	Demonstrate the estimation of serum bilirubin	S	P	Y	Practical	Skills assessment			
BI11.13	Demonstrate the estimation of SGOT/ SGPT	S	P	Y	Practical	Skills assessment			
BI11.14	Demonstrate the estimation of alkaline phosphatase	S	P	Y	Practical	Skills assessment			
BI11.15	Describe & discuss the composition of CSF	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
BI11.16	Observe use of commonly used equipments/techniques in biochemistry laboratory including: •pH meter •Paper chromatography of amino acid •Protein electrophoresis •TLC, PAGE •Electrolyte analysis by ISE •ABG analyzer •ELISA •Immunodiffusion •Autoanalyser •Quality control •DNA isolation from blood/ tissue	S	KH	Y	Demonstration	Skill assessment			
BI11.17	Explain the basis and rationale of biochemical tests done in the following conditions: - diabetes mellitus, - dyslipidemia, - myocardial infarction, - renal failure, gout, - proteinuria, - nephrotic syndrome, - edema, - jaundice, - liver diseases, pancreatitis, disorders of acid- base balance, - thyroid disorders.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Pathology	
BI11.18	Discuss the principles of spectrophotometry.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
BI11.19	Outline the basic principles involved in the functioning of instruments commonly used in a biochemistry laboratory and their applications.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
BI11.20	Identify abnormal constituents in urine, interpret the findings and correlate these with pathological states.	S	SH	Y	DOAP sessions	Skill assessment	1		

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
BI11.21	Demonstrate estimation of glucose, creatinine, urea and total protein in serum.	S	SH	Y	DOAP sessions	Skill assessment	1		
BI11.22	Calculate albumin: globulin (AG) ratio and creatinine clearance	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
BI11.23	Calculate energy content of different food Items, identify food items with high and low glycemic index and explain the importance of these in the diet	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
BI11.24	Enumerate advantages and/or disadvantages of use of unsaturated, saturated and trans fats in food.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
	Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication. **Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently,** **Column F: DOAP session – Demonstrate, Observe, Assess, Perform.** **Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation**								
Integration									
	Physiology								
PY3.11	Explain energy source and muscle metabolism	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Biochemistry
PY4.2	Describe the composition, mechanism of secretion, functions, and regulation of saliva, gastric, pancreatic, intestinal juices and bile secretion	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Biochemistry
PY4.4	Describe the physiology of digestion and absorption of nutrients	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Biochemistry
PY4.7	Describe & discuss the structure and functions of liver and gall bladder	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Biochemistry

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
PY4.8	Describe & discuss gastric function tests, pancreatic exocrine function tests & liver function tests	K	KH	Y	Lecture, Small group discussion, Demonstration Esophageal Manometry & endoscopy	Written/Viva voce			Biochemistry
PY4.9	Discuss the physiology aspects of: peptic ulcer, gastro-oesophageal reflux disease, vomiting, diarrhoea, constipation, Adynamic ileus, Hirschsprung's disease	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		General Medicine	Biochemistry
PY7.8	Describe & discuss Renal Function Tests	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Biochemistry
PY8.4	Describe function tests: Thyroid gland; Adrenal cortex, Adrenal medulla and pancreas	K	KH	Y	Lecture, Small group discussion	Written/Viva voce			Biochemistry
	Pathology								
PA12.2	Describe the pathogenesis of disorders caused by protein calorie malnutrition and starvation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, Pediatrics	
PA14.1	Describe iron metabolism	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry	
PA15.1	Describe the metabolism of Vitamin B12 and the etiology and pathogenesis of B12 deficiency	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, General Medicine	
PA16.1	Define and classify hemolytic anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, General Medicine	
PA16.2	Describe the pathogenesis and clinical features and hematologic indices of hemolytic anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, General Medicine	
PA16.3	Describe the pathogenesis, features, hematologic indices and peripheral blood picture of sickle cell anemia and thalassemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, General Medicine	
PA16.4	Describe the etiology, pathogenesis, hematologic indices and peripheral blood picture of Acquired hemolytic anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, General Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
PA25.1	Describe bilirubin metabolism, enumerate the etiology and pathogenesis of jaundice, distinguish between direct and indirect hyperbilirubinemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, General Medicine	

Dermatology, Venereology & Leprosy

DR17.1	Enumerate and identify the cutaneous findings in Vitamin A deficiency	K/S	SH	Y	Lecture, Small group discussion, Bedside clinic	Skill assessment Viva voce		General Medicine, Pediatrics, Biochemistry	
DR17.2	Enumerate and describe the various skin changes in Vitamin B complex deficiency	K	KH	Y	Lecture	Written/ Viva voce		General Medicine Pediatrics, Biochemistry	
DR17.3	Enumerate and describe the various changes in Vitamin C deficiency	K	KH	Y	Lecture	Written/ Viva voce		General Medicine, Pediatrics, Biochemistry	
DR17.4	Enumerate and describe the various changes in Zinc deficiency	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Pediatrics, Biochemistry	

Ophthalmology

OP7.1	Describe the surgical anatomy and the metabolism of the lens	K	KH	Y	Lecture,Small group discussion	Written/ Viva voce		Biochemistry, Human Anatomy	

General Medicine

IM2.3	Discuss and describe the lipid cycle and the role of dyslipidemia in the pathogenesis of atherosclerosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Biochemistry	
IM2.12	Choose and interpret a lipid profile and identify the desirable lipid profile in the clinical context	S	SH	Y	Bed side clinic, DOAP session	Skill assessment		Biochemistry	
IM2.18	Discuss and describe the indications, formulations, doses, side effects and monitoring for drugs used in the management of dyslipidemia	K	KH	Y	Lecture Small group discussion	Written/ Viva voce		Pharmacology, Biochemistry	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
IM11.12	Perform and interpret a capillary blood glucose test	S	P	Y	Bed side clinic, DOAP session	Skill assessment	2	Pathology, Biochemistry	
IM11.13	Perform and interpret a urinary ketone estimation with a dipstick	S	P	Y	Bed side clinic, DOAP session	Skill assessment	2	Pathology, Biochemistry	
IM13.1	Describe the clinical epidemiology and inherited & modifiable risk factors for common malignancies in India	K	K	Y	Lecture, Small group discussion	short note/ Viva voce		Pathology, Biochemistry	
IM23.1	Discuss and describe the methods of nutritional assessment in an adult and calculation of caloric requirements during illnesses	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Biochemistry	Pediatrics
IM23.2	Discuss and describe the causes and consequences of protein caloric malnutrition in the hospital	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Biochemistry	Pediatrics
IM23.3	Discuss and describe the aetiology, causes, clinical manifestations, complications, diagnosis and management of common vitamin deficiencies	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Biochemistry	Pediatrics
IM23.4	Enumerate the indications for enteral and parenteral nutrition in critically ill patients	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Biochemistry	Pediatrics
IM24.22	Describe and discuss the aetiopathogenesis, clinical presentation, complications, assessment and management of nutritional disorders in the elderly	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Biochemistry	

Pediatrics

PE9.1	Describe the age related nutritional needs of infants, children and adolescents including micronutrients and vitamins	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce		Community Medicine, Biochemistry	
PE9.3	Explains the Calorific value of common Indian foods	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry	
PE10.1	Define Describe the etio-pathogenesis , Classify including WHO classification , clinical features, complication and management of Severe Acute Malnourishment (SAM) and Moderate Acute Malnutrition (MAM)	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Biochemistry	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
PE10.2	Outline the clinical approach to a child with SAM and MAM	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Biochemistry	
PE10.3	Assessment of a patient with SAM and MAM, diagnosis, classification and planning management including hospital and community based intervention, rehabilitation and prevention	S	SH	Y	Bed side clinics, Skill Lab	Skill station		Physiology, Biochemistry	
PE11.1	Describe the common etiology, clinical features and management of Obesity in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Biochemistry, Pathology	
PE12.1	Discuss the (RDA) , dietary sources of Vitamin A and their role in Health and disease	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry	
PE12.2	Describe the causes, clinical features, diagnosis and management of Deficiency / excess of Vitamin A	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry	
PE12.3	Identify the clinical features of dietary deficiency / excess of Vitamin A	S	SH	Y	Bed side clinics, Small group discussion	Document in log book		Biochemistry	
PE12.4	Diagnose patients with Vitamin A deficiency, Classify and plan management	S	SH	N	Bed side clinics, Skill Station	Document in log book		Biochemistry	
PE12.5	Discuss the Vitamin A prophylaxis program and their recommendations	K	K	Y	Lecture, Small group Discussion	Written/ Viva voce		Biochemistry	
PE12.6	Discuss the RDA, dietary sources of Vitamin D and their role in Health and disease	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry	
PE12.7	Describe the causes, clinical features, diagnosis and management of Deficiency / excess of Vitamin D (Rickets and Hypervitaminosis D)	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, Physiology, Pathology	
PE12.8	Identify the clinical features of dietary deficiency of Vitamin D	S	SH	Y	Bedside clinics, Skills lab	Document in log book		Biochemistry, Physiology, Pathology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
PE12.9	Assess patients with Vitamin D deficiency, Diagnose, Classify and plan management	S	SH	Y	Bed side clinics	Document in log book		Biochemistry, Physiology, Pathology	
PE12.11	Discuss the RDA, dietary sources of Vitamin E and their role in Health and disease	K	K	N	Lecture, Small group discussion	Written/ Viva voce		Biochemistry	
PE12.12	Describe the causes, clinical features, diagnosis and management of deficiency of Vitamin E	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Biochemistry	
PE12.13	Discuss the RDA , dietary sources of Vitamin K and their role in Health and disease	K	K	N	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, Physiology, Pathology	
PE12.14	Describe the causes, clinical features, diagnosis , management and prevention of Deficiency of Vitamin K	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, Physiology, Pathology	
PE12.15	Discuss the RDA , dietary sources of Vitamin B and their role in Health and disease	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry	
PE12.16	Describe the causes, clinical features, diagnosis and management of Deficiency of B complex Vitamins	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry	
PE12.17	Identify the clinical features of Vitamin B complex deficiency	S	SH	Y	Bedside clinics, Skills lab	Document in log book		Biochemistry	
PE12.18	Diagnose patients with Vitamin B complex deficiency and plan management	S	SH	Y	Bed side clinics, Skill lab	Document in log book		Biochemistry	
PE12.19	Discuss the RDA, dietary sources of Vitamin C and their role in Health and disease	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Biochemistry	
PE12.20	Describe the causes, clinical features, diagnosis and management of Deficiency of Vitamin C (scurvy)	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Biochemistry	
PE12.21	Identify the clinical features Vitamin C deficiency	S	SH	N	Bed side clinics, Skill lab	Document in log book		Biochemistry	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
PE13.1	Discuss the RDA, dietary sources of Iron and their role in health and disease	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Biochemistry	
PE13.2	Describe the causes, diagnosis and management of Fe deficiency	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Biochemistry	
PE13.3	Identify the clinical features of dietary deficiency of Iron and make a diagnosis	S	SH	Y	Bed side clinics, Skill Lab	Document in log book		Pathology, Biochemistry	
PE13.4	Interpret hemogram and Iron Panel	S	SH	Y	Bed side clinic, Small group discussion	Skill Assessment		Pathology, Biochemistry	
PE13.7	Discuss the RDA , dietary sources of Iodine and their role in Health and disease	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry	
PE13.8	Describe the causes, clinical features, diagnosis and management of Deficiency of Iodine	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry	
PE13.9	Identify the clinical features of Iodine deficiency disorders	S	SH	N	Lecture, Bed side clinic	Written/ Viva voce		Biochemistry	
PE13.10	Discuss the National Goiter control program and their recommendations	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, Community Medicine	
PE13.11	Discuss the RDA, dietary sources of Calcium and its role in Health and disease	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry	
PE13.12	Describe the causes, clinical features, diagnosis and management of Ca Deficiency	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry	
PE13.13	Discuss the RDA , dietary sources of Magnesium and their role in Health and disease	K	K	N	Lecture, Small group discussion	Written/ Viva voce		Biochemistry	
PE13.14	Describe the causes, clinical features, diagnosis and management of Magnesium Deficiency	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Biochemistry	
PE19.1	Explain the components of the Universal immunization Program and the sub National Immunization Programs	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
PE19.2	Explain the epidemiology of Vaccine preventable diseases	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology	
PE19.3	Vaccine description with regards to Classification of vaccines, Strain used, Dose, route, schedule, Risks benefits and side effects, indications and contraindications	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology	
PE19.4	Define cold chain and discuss the methods of safe storage and handling of vaccines	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology	
PE19.5	Discuss immunization in special situations – HIV positive children, immunodeficiency, preterm, organ transplants, those who received blood and blood products, splenectomised children, Adolescents, travellers	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology	
PE21.11	Perform and interpret the common analytes in a Urine examination	S	SH	Y	Bed side clinic Labs, Skill lab	Skill assessment		Biochemistry, Pathology	
PE29.16	Discuss the Indications for Hemoglobin electrophoresis and interpret report	K	K	N	Small group discussion	Viva voce		Biochemistry	
PE33.6	Perform and interpret Urine Dip Stick for Sugar	S	P	Y	DOAP session	Skill assessment	3	Biochemistry	

General Surgery

SU1.1	Describe basic concepts of homeostasis, enumerate the metabolic changes in injury and their mediators.	K	KH	Y	Lecture, Bed side clinic and Small group discussion.	Written/ Viva voce.		Physiology, Biochemistry	
SU1.2	Describe the factors that affect the metabolic response to injury.	K	KH	Y	Lecture, Bed side clinic and Small group discussion.	Written/ Viva voce.		Biochemistry	
SU9.1	Choose appropriate biochemical, microbiological, pathological, imaging investigations and interpret the investigative data in a surgical patient.	K	KH	Y	Lecture, Small group discussion.	Written/ Viva voce		Biochemistry, Microbiology, Pathology	
SU12.3	Discuss the nutritional requirements of surgical patients, the methods of providing nutritional support and their complications.	K	KH	Y	Lecture, Small group discussion, Bedside clinic discussion	Written/ Viva voce		Biochemistry	

PHARMACOLOGY (CODE: PH)

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PHARMACOLOGY									
KNOWLEDGE: Topic: Pharmacology		**Number of competencies: (64)**			**Number of procedures that require certification : (NIL)**				
PH1.1	Define and describe the principles of pharmacology and pharmacotherapeutics	K	K	Y	Lecture	Written/ Viva voce			
PH1.2	Describe the basis of Evidence based medicine and Therapeutic drug monitoring	K	KH	Y	Lecture	Written/ Viva voce			
PH1.3	Enumerate and identify drug formulations and drug delivery systems	K/S	SH	Y	Lecture, Practical	Written/ Viva voce			
PH1.4	Describe absorption, distribution, metabolism & excretion of drugs	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce			
PH1.5	Describe general principles of mechanism of drug action	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce			
PH1.6	Describe principles of Pharmacovigilance & ADR reporting systems	K	KH	Y	Lecture, Practical	Written/ Viva voce			
PH1.7	Define, identify and describe the management of adverse drug reactions (ADR)	K/S	KH	Y	Lecture, Practical	Written/ Viva voce			
PH1.8	Identify and describe the management of drug interactions	K/S	KH	Y	Lecture, Practical	Written/ Viva voce			
PH1.9	Describe nomenclature of drugs i.e. generic, branded drugs	K/S	SH	Y	Lecture, Practical	Written/ Viva voce			
PH1.10	Describe parts of a correct, complete and legible generic prescription. Identify errors in prescription and correct appropriately	K/S	SH	Y	Lecture, Practical	Written/ Viva voce			
PH1.11	Describe various routes of drug administration, eg., oral, SC, IV, IM, SL	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PH1.12	Calculate the dosage of drugs using appropriate formulae for an individual patient, including children, elderly and patient with renal dysfunction.	K/S	SH	Y	Lecture, practical	Written/ Viva voce		Pediatrics, General Medicine	
PH1.13	Describe mechanism of action, types, doses, side effects, indications and contraindications of adrenergic and anti-adrenergic drugs	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce			
PH1.14	Describe mechanism of action, types, doses, side effects, indications and contraindications of cholinergic and anticholinergic drugs	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce			
PH1.15	Describe mechanism/s of action, types, doses, side effects, indications and contraindications of skeletal muscle relaxants	K	KH	Y	Lecture	Written/ Viva voce		Anesthesiology, Physiology	
PH1.16	Describe mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs which act by modulating autacoids, including: anti-histaminics, 5-HT modulating drugs, NSAIDs, drugs for gout, anti-rheumatic drugs, drugs for migraine	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	
PH1.17	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of local anesthetics	K	KH	Y	Lecture	Written/ Viva voce		Anesthesiology	
PH1.18	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of general anaesthetics, and pre-anesthetic medications	K	KH	Y	Lecture	Written/ Viva voce		Anesthesiology	
PH1.19	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs which act on CNS, (including anxiolytics, sedatives & hypnotics, anti-psychotic, anti-depressant drugs, anti-maniacs, opioid agonists and antagonists, drugs used for neurodegenerative disorders, anti-epileptics drugs)	K	KH	Y	Lecture	Written/ Viva voce		Psychiatry, Physiology	
PH1.20	Describe the effects of acute and chronic ethanol intake	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Psychiatry	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PH1.21	Describe the symptoms and management of methanol and ethanol poisonings	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PH1.22	Describe drugs of abuse (dependence, addiction, stimulants, depressants, psychedelics, drugs used for criminal offences)	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Psychiatry	Forensic Medicine
PH1.23	Describe the process and mechanism of drug deaddiction	K/S	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Psychiatry	
PH1.24	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs affecting renal systems including diuretics, antidiuretics- vasopressin and analogues	K	KH	Y	Lecture	Written/ Viva voce			
PH1.25	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs acting on blood, like anticoagulants, antiplatelets, fibrinolytics, plasma expanders	K	KH	Y	Lecture	Written/ Viva voce		Physiology, General Medicine	
PH1.26	Describe mechanisms of action, types, doses, side effects, indications and contraindications of the drugs modulating the renin-angiotensin and aldosterone system	K	KH	Y	Lecture	Written/ Viva voce		Physiology, General Medicine	
PH1.27	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of antihypertensive drugs and drugs used in shock	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	
PH1.28	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in ischemic heart disease (stable, unstable angina and myocardial infarction), peripheral vascular disease	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	
PH1.29	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in congestive heart failure	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	
PH1.30	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the antiarrhythmics	K	KH	N	Lecture	Written/ Viva voce		General Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PH1.31	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in the management of dyslipidemias	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PH1.32	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of drugs used in bronchial asthma and COPD	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce		Respiratory Medicine	
PH1.33	Describe the mechanism of action, types, doses, side effects, indications and contraindications of the drugs used in cough (antitussives, expectorants/ mucolytics)	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce		Respiratory Medicine	
PH1.34	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs used as below: 1. Acid-peptic disease and GERD 2. Antiemetics and prokinetics 3. Antidiarrhoeals 4 .Laxatives 5. Inflammatory Bowel Disease 6. Irritable Bowel Disorders, biliary and pancreatic diseases	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce		General Medicine	
PH1.35	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of drugs used in hematological disorders like: 1.Drugs used in anemias 2.Colony Stimulating factors	K	KH	Y	Lecture	Written/ Viva voce		General Medicine, Physiology	Pharmacology
PH1.36	Describe the mechanism of action, types, doses, side effects, indications and contraindications of drugs used in endocrine disorders (diabetes mellitus, thyroid disorders and osteoporosis)	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	
PH1.37	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used as sex hormones, their analogues and anterior Pituitary hormones	K	KH	Y	Lecture	Written/ Viva voce			
PH1.38	Describe the mechanism of action, types, doses, side effects, indications and contraindications of corticosteroids	K	KH	Y	Lecture	Written/ Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PH1.39	Describe mechanism of action, types, doses, side effects, indications and contraindications the drugs used for contraception	K	KH	Y	Lecture	Written/ Viva voce		Obstetrics & Gynaecology	
PH1.40	Describe mechanism of action, types, doses, side effects, indications and contraindications of 1. Drugs used in the treatment of infertility, and 2. Drugs used in erectile dysfunction	K	KH	Y	Lecture	Written/ Viva voce		Obstetrics & Gynaecology	
PH1.41	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of uterine relaxants and stimulants	K	KH	Y	Lecture	Written/ Viva voce		Obstetrics & Gynaecology	
PH1.42	Describe general principles of chemotherapy	K	KH	Y	Lecture	Written/ Viva voce			
PH1.43	Describe and discuss the rational use of antimicrobials including antibiotic stewardship program	K	KH	Y	Lecture	Written/ Viva voce		General Medicine, Pediatrics	Microbiology
PH1.44	Describe the first line antitubercular dugs, their mechanisms of action, side effects and doses.	K	KH	Y	Lecture	Written/ Viva voce		Respiratory Medicine	
PH1.45	Describe the dugs used in MDR and XDR Tuberculosis	K	KH	Y	Lecture	Written/ Viva voce		Respiratory Medicine	Microbiology
PH1.46	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of antileprotic drugs	K	KH	Y	Lecture	Written/ Viva voce		Dermatology, Venereology & Leprosy	Microbiology
PH1.47	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in malaria, KALA-AZAR, amebiasis and intestinal helminthiasis	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	Microbiology
PH1.48	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in UTI/ STD and viral diseases including HIV	K	KH	Y	Lecture	Written/Viva voce			Microbiology
PH1.49	Describe mechanism of action, classes, side effects, indications and contraindications of anticancer drugs	K	KH	Y	Lecture	Written/Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PH1.50	Describe mechanisms of action, types, doses, side effects, indications and contraindications of immunomodulators and management of organ transplant rejection	K	KH	Y	Lecture	Written/ Viva voce			
PH1.51	Describe occupational and environmental pesticides, food adulterants, pollutants and insect repellents	K	KH/	Y	Lecture	Written/ Viva voce			
PH1.52	Describe management of common poisoning, insecticides, common sting and bites	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	
PH1.53	Describe heavy metal poisoning and chelating agents	K	KH	N	Lecture	Written/ Viva voce			
PH1.54	Describe vaccines and their uses	K	KH	Y	Lecture	Written/ Viva voce			
PH1.55	Describe and discuss the following National Health Programmes including Immunisation, Tuberculosis, Leprosy, Malaria, HIV, Filaria, Kala Azar, Diarrhoeal diseases, Anaemia & nutritional disorders, Blindness, Non-communicable diseases, cancer and Iodine deficiency	K	KH	Y	Lecture	Written/ Viva voce			Community Medicine
PH1.56	Describe basic aspects of Geriatric and Pediatric pharmacology	K	KH	Y	Lecture	Written/ Viva voce		Pediatrics	
PH1.57	Describe drugs used in skin disorders	K	KH	Y	Lecture	Written/ Viva voce		Dermatology, Venereology & Leprosy	
PH1.58	Describe drugs used in Ocular disorders	K	KH	Y	Lecture	Written/ Viva voce		Ophthalmology	
PH1.59	Describe and discuss the following: Essential medicines, Fixed dose combinations, Over the counter drugs, Herbal medicines	K	KH	Y	Lecture	Written/ Viva voce			
PH1.60	Describe and discuss Pharmacogenomics and Pharmacoeconomics	K	KH	N	Lecture	Written/ Viva voce			
PH1.61	Describe and discuss dietary supplements and nutraceuticals	K	KH	N	Lecture	Written/ Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PH1.62	Describe and discuss antiseptics and disinfectants	K	KH	Y	Lecture	Written/ Viva voce			
PH1.63	Describe Drug Regulations, acts and other legal aspects	K	KH	Y	Lecture	Written/ Viva voce			
PH1.64	Describe overview of drug development, Phases of clinical trials and Good Clinical Practice	K	KH	Y	Lecture	Written/ Viva voce			
SKILLS: Topic: Clinical Pharmacy		**Number of competencies: (04)**				**Number of procedures that require certification : (NIL)**			
PH2.1	Demonstrate understanding of the use of various dosage forms (oral/local/parenteral; solid/liquid)	S/C	SH	Y	DOAP sessions	Skills assessment			
PH2.2	Prepare oral rehydration solution from ORS packet and explain its use	S/C	SH	Y	DOAP sessions	Skills assessment			
PH2.3	Demonstrate the appropriate setting up of an intravenous drip in a simulated environment	S	SH	Y	DOAP sessions	Skills assessment			
PH2.4	Demonstrate the correct method of calculation of drug dosage in patients including those used in special situations	S	SH	Y	DOAP sessions	Skills assessment		Pediatrics, General Medicine	
SKILLS: Topic: Clinical Pharmacology		**Number of competencies: (08)**				**Number of procedures that require certification : (04)**			
PH3.1	Write a rational, correct and legible generic prescription for a given condition and communicate the same to the patient	S/C	P	Y	Skill station	Skill station	5	General Medicine	
PH3.2	Perform and interpret a critical appraisal (audit) of a given prescription	S	P	Y	Skill Lab	Maintenance of log book	3		
PH3.3	Perform a critical evaluation of the drug promotional literature	S	P	Y	Skill Lab	Maintenance of log book/ Skill station	3	General Medicine	
PH3.4	To recognise and report an adverse drug reaction	S	SH	Y	Skill station	Maintenance of log book/ Skill station			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PH3.5	To prepare and explain a list of P-drugs for a given case/condition	S	P	Y	Skill station	Maintenance of log book	3	General Medicine	
PH3.6	Demonstrate how to optimize interaction with pharmaceutical representative to get authentic information on drugs	S	SH	N	Skill station	maintenance of log book			
PH3.7	Prepare a list of essential medicines for a healthcare facility	S	SH	Y	Skill station	Maintenance of log book			
PH3.8	Communicate effectively with a patient on the proper use of prescribed medication	C/A	SH	Y	Skill Lab	Skill station			
SKILLS: Topic: Experimental Pharmacology		**Number of competencies: (02)**				**Number of procedures that require certification :(NIL)**			
PH4.1	Administer drugs through various routes in a simulated environment using mannequins	S	SH	Y	DOAP sessions	Skills assessment			
PH4.2	Demonstrate the effects of drugs on blood pressure (vasopressor and vaso-depressors with appropriate blockers) using computer aided learning	S	SH	Y	Skill lab	Skill station			
Communication Topic: Pharmacology		**Number of competencies: (07)**				**Number of procedures that require certification : (NIL)**			
PH5.1	Communicate with the patient with empathy and ethics on all aspects of drug use	A/C	SH	Y	Small group discussion	skill station		General Medicine	
PH5.2	Communicate with the patient regarding optimal use of a) drug therapy, b) devices and c) storage of medicines	A/C	SH	Y	Small group discussion	Skill station			
PH5.3	Motivate patients with chronic diseases to adhere to the prescribed management by the health care provider	A/C	SH	Y	Small group discussion	short note/skill station			
PH5.4	Explain to the patient the relationship between cost of treatment and patient compliance	A/C	SH	Y	Small group discussion	short note/ viva voce		General Medicine	
PH5.5	Demonstrate an understanding of the caution in prescribing drugs likely to produce dependence and recommend the line of management	K	KH	Y	Small group discussion	short note/ Viva voce		Psychiatry	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PH5.6	Demonstrate ability to educate public & patients about various aspects of drug use including drug dependence and OTC drugs	A/C	SH	Y	Small group discussion	Skill station		Psychiatry	
PH5.7	Demonstrate an understanding of the legal and ethical aspects of prescribing drugs	K	KH	Y	Small group discussion	short note/ Viva voce			Forensic Medicine

Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.
Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently,
Column F: DOAP session – Demonstrate, Observe, Assess, Perform.
Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation

Integration

					Physiology				
PY3.5	Discuss the action of neuro-muscular blocking agents	K	KH	Y	Lectures, Small group discussion	Written/ Viva voce		Anaesthesiology, Pharmacology	
					Microbiology				
MI1.6	Describe the mechanisms of drug resistance, methods of antimicrobial susceptibility testing and monitoring of antimicrobial therapy.	K	K	Y	Lecture , Small group discussion	Written Viva			Pharmacology
MI3.3	Describe the enteric fever pathogens and discuss the evolution of the clinical course, the laboratory diagnosis of the diseases caused by them	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology, Pathology
MI3.5	Enumerate the causative agents of food poisoning and discuss the pathogenesis, clinical course and laboratory diagnosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology
MI3.6	Describe the etio-pathogenesis of Acid Peptic Disease (APD) and the clinical course. Discuss the diagnosis and management of the causative agent of APD	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology, Pathology
					Community Medicine				

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
CM3.8	Describe the mode of action & application cycle of commonly used insecticides and rodenticides	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
CM19.1	Define and describe the concept of Essential Medicine List (EML)	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Pharmacology
CM19.2	Describe roles of essential medicine in primary health care	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Pharmacology
CM19.3	Describe counterfeit medicine and its prevention	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Pharmacology
	Forensic Medicine & Toxicology								
FM4.11	Describe and discuss euthanasia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	Pharmacology
FM4.12	Discuss legal and ethical issues in relation to stem cell research	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	Pharmacology
FM4.17	Describe and discuss ethical Principles: Respect for autonomy, non-malfeasance, beneficence & justice	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	Pharmacology
FM4.22	Explain Oath – Hippocrates, Charaka and Sushruta and procedure for administration of Oath	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	Pharmacology
FM4.23	Describe the modified Declaration of Geneva and its relevance	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	Pharmacology
FM4.25	Clinical research & Ethics: Discuss human experimentation including clinical trials	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		AETCOM	Pharmacology
FM4.26	Discuss the constitution and functions of ethical committees	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	Pharmacology
FM4.27	Describe and discuss Ethical Guidelines for Biomedical Research on Human Subjects & Animals	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		AETCOM	Pharmacology
FM8.1	Describe the history of Toxicology	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM8.2	Define the terms Toxicology, Forensic Toxicology, Clinical Toxicology and poison	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
FM8.3	Describe the various types of poisons, Toxicokinetics & Toxicodynamics and diagnosis of poisoning in living and dead	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
FM8.4	Describe the Laws in relations to poisons including NDPS Act, Medico-legal aspects of poisons	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
FM8.5	Describe Medico-legal autopsy in cases of poisoning including preservation and dispatch of viscera for chemical analysis	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce/ OSPE		Pharmacology	
FM8.6	Describe the general symptoms, principles of diagnosis and management of common poisons encountered in India	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce /OSCE		Pharmacology	
FM8.7	Describe simple Bedside clinic tests to detect poison/drug in a patient's body fluids	K	K/KH	Y	Lectures, Small group discussion, Bed side clinic, DOAP session	Written/ Viva voce /OSCE		Pharmacology, General Medicine	
FM8.8	Describe basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination	K	K/KH	Y	Lectures, Small group discussion, Bed side clinic, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
FM9.1	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Caustics Inorganic – sulphuric, nitric, and hydrochloric acid Organic- Carboloic Acid (phenol), Oxalic and acetylsalicylic acids.	K	K/KH	Y	Lectures, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
FM9.2	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Phosphorus, Iodine, Barium	K	K/KH	Y	Lectures, Small group discussion, Bed side clinic, Autopsy,DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
FM9.3	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Arsenic, lead, mercury, copper, iron, cadmium and thallium	K	K/KH	Y	Lectures, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM9.4	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Ethanol, methanol, ethylene glycol	K	K/KH	Y	Lectures, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
FM9.5	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Organophosphates, Carbamates, Organochlorines, Pyrethroids, Paraquat, Aluminium and Zinc phosphide	K	K/KH	Y	Lectures, Small group discussion Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	Pharmacology
FM9.6	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Ammonia, carbon monoxide, hydrogen cyanide & derivatives, methyl isocyanate, tear (riot control) gases	K	K/KH	Y	Lectures, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
FM10.1	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to: i. Antipyretics – Paracetamol, Salicylates ii. Anti-Infectives (Common antibiotics – an overview) iii. Neuropsychotoxicology Barbiturates, benzodiazepines, phenytoin, lithium, haloperidol, neuroleptics, tricyclics iv. Narcotic Analgesics, Anaesthetics, and Muscle Relaxants v. Cardiovascular Toxicology Cardiotoxic plants – oleander, odollam, aconite, digitalis vi. Gastro-Intestinal and Endocrinal Drugs – Insulin	K	K/KH	Y	Lectures, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	Pharmacology
	Dermatology, Venereology & Leprosy								
DR5.3	Enumerate and describe the pharmacology, administration and adverse reaction of pharmacotherapies for scabies	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		Pediatrics	Pharmacology
DR7.3	Describe the pharmacology and action of antifungal (systemic and topical). agents Enumerate side effects of antifungal therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology ,Pharmacology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
DR8.7	Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for common viral illnesses of the skin	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			Pharmacology
DR9.4	Enumerate, describe and identify lepra reactions and supportive measures and therapy of lepra reactions	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	Pharmacology
DR9.5	Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for various classes of leprosy based on National Guidelines	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	Pharmacology, Community Medicine
DR9.6	Describe the treatment of Leprosy based on WHO guidelines	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	Pharmacology, Community Medicine
DR9.7	Enumerate and describe the complications of leprosy and its management, including understanding disability and stigma	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	Pharmacology, Psychiatry
DR10.3	Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for syphilis	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	Pharmacology, Microbiology
DR10.8	Enumerate the indications and describe the pharmacology, indications and adverse reactions of drugs used in the non-syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	Pharmacology, Microbiology
DR11.3	Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for dermatologic lesions in HIV	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	Pharmacology, Microbiology
DR14.5	Enumerate the indications and describe the pharmacology indications and adverse reactions of drugs used in the urticaria and angioedema	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			Pharmacology
DR15.3	Enumerate the indications and describe the pharmacology indications and adverse reactions of topical and systemic drugs used in treatment of pyoderma	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Surgery	Microbiology, Pharmacology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
			Anesthesiology						
AS3.6	Choose and write a prescription for appropriate premedications for patients undergoing surgery	S	SH	Y	DOAP session, Bedside clinic session	Skill station		Pharmacology	
AS4.1	Describe and discuss the pharmacology of drugs used in induction and maintenance of general anaesthesia (including intravenous and inhalation induction agents, opiate and non-opiate analgesics, depolarising and non-depolarising muscle relaxants, anticholinesterases	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		Pharmacology	
AS4.3	Observe and describe the principles and the practical aspects of induction and maintenance of anesthesia	S	KH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce		Pharmacology	
AS5.4	Observe and describe the pharmacology and correct use of commonly used drugs and adjuvant agents in regional anesthesia	S	KH	Y	Lecture, Small group discussion, DOAP session	Written / Viva voce		Pharmacology	
AS8.3	Describe the pharmacology and use of drugs in the management of pain	K	KH	Y	Lecture, Small group discussion, DOAP session	Written / Viva voce		Pharmacology	
AS8.4	Describe the principles of pain management in palliative care	K	KH	Y	Lecture, Small group discussion, DOAP session	Written / Viva voce		Pharmacology	General Medicine
AS8.5	Describe the principles of pain management in the terminally ill	K	KH	Y	Lecture, Small group discussion, DOAP session	Written / Viva voce		Pharmacology	General Medicine
AS10.4	Define and describe common medical and medication errors in anaesthesia	K	KH	Y	Lecture, Small group discussion, DOAP session	Written / Viva voce		Pharmacology	General Medicine
			Psychiatry						

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PS4.4	Describe the treatment of alcohol and substance abuse disorders including behavioural and pharmacologic therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	General Medicine
PS4.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in alcohol and substance abuse	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	General Medicine
PS5.3	Describe the treatment of schizophrenia including behavioural and pharmacologic therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS5.5	Enumerate and describe the pharmacologic basis and side effects of drugs used in schizophrenia	K	KH	Y	Lecture Small group discussion	Written/ Viva voce		Pharmacology	
PS6.4	Describe the treatment of depression including behavioural and pharmacologic therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS6.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in depression	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS7.4	Describe the treatment of bipolar disorders including behavioural and pharmacologic therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS7.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in bipolar disorders	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS8.4	Describe the treatment of anxiety disorders including behavioural and pharmacologic therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS8.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in anxiety disorders	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS10.4	Describe the treatment of somatoform disorders including behavioural, psychosocial and pharmacologic therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	General Medicine
PS10.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in somatoform, dissociative and conversion disorders	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	General Medicine

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PS11.4	Describe the treatment of **personality** disorders including behavioural, psychosocial and pharmacologic therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS11.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in personality disorders	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS12.4	Describe the treatment of **psychosomatic** disorders including behavioural, psychosocial and pharmacologic therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	General Medicine
PS12.6	Enumerate and describe the pharmacologic basis and side effects of drugs used in psychosomatic disorders	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS13.4	Describe the treatment of psychosexual and gender identity disorders including behavioural, psychosocial and pharmacologic therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
PS18.1	Enumerate the indications and describe the pharmacology, dose and side effects of commonly use drugs in psychiatric disorders	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
				General Medicine					
IM1.24	Describe and discuss the pharmacology of drugs including indications & contraindications in the management of heart failure including diuretics, ACE inhibitors, Beta blockers, aldosterone antagonists and cardiac glycosides	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
IM1.27	Describe and discuss the role of penicillin prophylaxis in the prevention of rheumatic heart disease	K	KH	Y	Bedside clinic, Small group discussion	Written		Microbiology Pharmacology	
IM1.30	Administer an intramuscular injection with an appropriate explanation to the patient	S	SH	Y	Bedside clinic, Skill assessment	log book documentation of completion		Pharmacology	
IM2.15	Discuss and describe the medications used in patients with an acute coronary syndrome based on the clinical presentation	K	KH	Y	Lecture Small group discussion	Written/ Viva voce		Pharmacology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
IM2.18	Discuss and describe the indications, formulations, doses, side effects and monitoring for drugs used in the management of dyslipidemia	K	KH	Y	Lecture Small group discussion	Written/ Viva voce		Pharmacology, Biochemistry	
IM2.20	Discuss and describe the assessment and relief of pain in acute coronary syndromes	K	KH	Y	Lecture Small group discussion	Written/ Viva voce		Pharmacology	
IM2.23	Describe and discuss the indications for nitrates, anti platelet agents, gpIIb - IIIa inhibitors, beta blockers, ACE inhibitors etc in the management of coronary syndromes	K	KH	Y	Lecture Small group discussion	Written/ Viva voce		Pharmacology	
IM3.12	Select, describe and prescribe based on the most likely aetiology, an appropriate empirical antimicrobial based on the pharmacology and antimicrobial spectrum	S	SH	Y	Bed side clinic, DOAP session	Skill Assessment/ Written/ Viva voce		Pharmacology, Microbiology	
IM3.13	Select, describe and prescribe based on culture and sensitivity appropriate empaling antimicrobial based on the pharmacology and antimicrobial spectrum	S	SH	Y	Bed side clinic, DOAP session	Skill Assessment/ Written/ Viva voce		Pharmacology, Microbiology	
IM4.22	Describe and discuss the pharmacology, indications, adverse reactions, interactions of antimalarial drugs and basis of resistance	K	KH	Y	Small group, Lecture	Written/ Viva voce		Pharmacology	
IM4.23	Prescribe drugs for malaria based on the species identified, prevalence of drug resistance and National Programs	S	SH	Y	Skill assessment	Skill assessment		Microbiology, Pharmacology	
IM4.26	Counsel the patient on malarial prevention	C	SH	Y	DOAP session	Skill assessment		Microbiology, Pharmacology	
IM5.7	Enumerate and describe the causes and pathophysiology of drug induced liver injury	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Pharmacology	
IM5.16	Describe and discuss the management of hepatitis, cirrhosis, portal hypertension, ascites spontaneous, bacterial peritonitis and hepatic encephalopathy	K	KH	Y	Written, Small group	Skill Assessment/ Written/ Viva voce		Pharmacology	General Surgery
IM6.13	Describe and enumerate the indications and side effects of drugs for bacterial, viral and other types of diarrhea	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology, Microbiology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
IM6.17	Discuss and describe the principles of HAART, the classes of antiretrovirals used, adverse reactions and interactions	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology, Pharmacology	
IM6.18	Discuss and describe the principles and regimens used in post exposure prophylaxis	K	K	Y	Lecture Small group discussion	Written/ Viva voce		Microbiology, Pharmacology	
IM7.21	Select, prescribe and communicate appropriate medications for relief of joint pain	K/C	SH	Y	DOAP session	Skill assessment/ written		Pharmacology	Orthopedics
IM7.22	Select, prescribe and communicate preventive therapy for crystalline arthropathies	K/C	SH	Y	DOAP session	Skill assessment/ written		Pharmacology	
IM7.23	Select, prescribe and communicate treatment option for systemic rheumatologic conditions	K/C	SH	Y	DOAP session	Skill assessment/ written		Pharmacology	
IM7.24	Describe the basis for biologic and disease modifying therapy in rheumatologic diseases	K	KH	Y	Bed side clinic, Small group discussion	Skill assessment/ written		Pharmacology	
IM8.14	Develop an appropriate treatment plan for essential hypertension	K	KH	Y	Small group discussion	Skill assessment/ Written/ Viva voce		Pharmacology	
IM8.15	Recognise, prioritise and manage hypertensive emergencies	S	SH	Y	DOAP session	Skill assessment/ written		Pharmacology	
IM9.14	Prescribe replacement therapy with iron, B12, folate	S	SH	Y	Bed side clinic, DOAP session	Skill assessment/ written		Pharmacology	
IM9.15	Describe the national programs for anemia prevention	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology, Community Medicine	
IM10.25	Identify and describe the priorities in the management of ARF including diet, volume management, alteration in doses of drugs, monitoring and indications for dialysis	K/C	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
IM11.16	Discuss and describe the pharmacologic therapies for diabetes their indications, contraindications, adverse reactions and interactions	K	KH	Y	Small group discussion, Lecture	Written/ Viva voce		Pharmacology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
IM11.18	Describe and discuss the pharmacology, indications, adverse reactions and interactions of drugs used in the prevention and treatment of target organ damage and complications of Type II Diabetes including neuropathy, nephropathy, retinopathy, hypertension, dyslipidemia and cardiovascular disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
IM11.19	Demonstrate and counsel patients on the correct technique to administer insulin	S/C	SH	Y	DOAP session	Skill assessment		Pharmacology	
IM12.13	Describe the pharmacology, indications, adverse reaction, interactions of thyroxine and antithyroid drugs	K	KH	Y	Lecture, Small group discussion	Viva voce/ short note		Pharmacology	General Surgery
IM12.14	Write and communicate to the patient appropriately a prescription for thyroxine based on age, sex, and clinical and biochemical status	S/C	SH	Y	Skill assessment	Skill assessment		Pharmacology	
IM12.15	Describe and discuss the indications of thionamide therapy, radio iodine therapy and General Surgery in the management of thyrotoxicosis	K	KH	Y	Bedside clinic, small group discussion	short note/ Viva voce		Pharmacology	General Surgery
IM13.6	Describe and distinguish the difference between curative and palliative care in patients with cancer	K	K	N	Lecture, Small group discussion	short note/ Viva voce		Pharmacology	
IM13.13	Describe and assess pain and suffering objectively in a patient with cancer	K	KH	Y	Bedside clinic, small group discussion	short note/ Viva voce		Pharmacology	General Surgery
IM13.14	Describe the indications for General Surgery, radiation and chemotherapy for common malignancies	K	KH	Y	Bedside clinic, small group discussion	short note/ Viva voce		Pharmacology	General Surgery
IM13.17	Describe and enumerate the indications, use, side effects of narcotics in pain alleviation in patients with cancer	K	KH	Y	Bedside clinic, small group discussion	short note/ Viva voce		Pharmacology	Anesthesiology
IM14.13	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for obesity	K	K	Y	Lecture, small group discussion	short note/ Viva voce		Pharmacology	
IM15.14	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of pressors used in the treatment of Upper GI bleed	K	K	Y	Lecture, Small group discussion	Viva voce/ short note		Pharmacology	General Surgery

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
IM15.15	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of acid peptic disease including Helicobacter pylori	K	K	Y	Lecture, small group discussion	short note/ Viva voce		Pharmacology, Microbiology	General Surgery
IM16.13	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for parasitic causes of diarrhea	K	K	Y	Lecture, small group discussion	short note/ Viva voce		Pharmacology, Microbiology	
IM16.14	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for bacterial and viral diarrhea	K	K	Y	Lecture, Small group discussion	Short note/ Viva voce		Pharmacology, Microbiology	
IM16.16	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy including immunotherapy	K	K	Y	Lecture, small group discussion	short note/ Viva voce		Pharmacology	
IM17.11	Describe the indications, pharmacology, dose, side effects of abortive therapy in migraine	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce		Pharmacology	
IM17.12	Describe the indications, pharmacology, dose, side effects of prophylactic therapy in migraine	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce		Pharmacology	
IM17.13	Describe the pharmacology, dose, adverse reactions and regimens of drugs used in the treatment of bacterial, tubercular and viral meningitis	K	KH	Y	Lecture, Small Group discussion	Written/ Viva voce		Pharmacology	
IM17.14	Counsel patients with migraine on lifestyle changes and need for prophylactic therapy	A/C	SH	N	DOAP session	Skill Assessment		Pharmacology	
IM19.8	Discuss and describe the pharmacology, dose, side effects and interactions used in the drug therapy of Parkinson’s syndrome	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
IM19.9	Enumerate the indications for use of surgery and botulinum toxin in the treatment of movement disorders	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	General Surgery
IM20.1	Enumerate the poisonous snakes of your area and describe the distinguishing marks of each	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Forensic Medicine, Pharmacology	
IM20.7	Enumerate the indications and describe the pharmacology, dose, adverse reactions, hypersensitivity reactions of anti-snake venom	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
IM20.8	Describe the diagnosis, initial approach, stabilisation and therapy of scorpion envenomation	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
IM20.9	Describe the diagnosis, initial approach, stabilisation and therapy of bee sting allergy	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
IM21.1	Describe the initial approach to the stabilisation of the patient who presents with poisoning	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
IM21.2	Enumerate the common plant poisons seen in your area and describe their toxicology, clinical features, prognosis and specific approach to detoxification	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Forensic Medicine, Pharmacology	
IM21.3	Enumerate the common corrosives used in your area and describe their toxicology, clinical features, prognosis and approach to therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Forensic Medicine, Pharmacology	
IM21.4	Enumerate the commonly observed drug overdose in your area and describe their toxicology, clinical features, prognosis and approach to therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Forensic Medicine, Pharmacology	
IM21.5	Observe and describe the functions and role of a poison center in suspected poisoning	S	KH	Y	DOAP session	document in log book		Forensic Medicine, Pharmacology	
IM21.6	Describe the medico-legal aspects of suspected suicidal or homicidal poisoning and demonstrate the correct procedure to write a medico-legal report on a suspected poisoning	S	KH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce/ Skill assessment		Forensic Medicine, Pharmacology	
IM21.7	Counsel family members of a patient with suspected poisoning about the clinical and medico-legal aspects with empathy	A/C	SH	Y	DOAP session	Skill assessment		Forensic Medicine, Pharmacology	
IM22.3	Describe the approach to the management of hypercalcemia	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
IM25.11	Develop an appropriate empiric treatment plan based on the patient's clinical and immune status pending definitive diagnosis	C	SH	Y	DOAP session	Skill assessment		Microbiology, Pharmacology	
	Pediatrics								

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PE13.5	Propose a management plan for Fe Deficiency Anaemia	S	SH	Y	Bed side clinics, Skill lab	Skill Assessment		Pathology, Pharmacology	
PE13.6	Discuss the National Anaemia Control Program and its recommendations	K	K	Y	Lecture, Small group Discussion	Written/ Viva voce		Pharmacology, Community Medicine	
PE14.1	Discuss the risk factors, clinical features, diagnosis and management of Lead Poisoning	K	KH	N	Lecture, Small group Discussion	Written/ Viva voce		Pharmacology	
PE14.3	Discuss the risk factors, clinical features, diagnosis and management of Organo phosphorous poisoning	K	KH	N	Lecture, Small group Discussion	Written/ Viva voce		Pharmacology	General Medicine
PE14.4	Discuss the risk factors, clinical features, diagnosis and management of paracetamol Poisoning	K	KH	N	Lecture, Small group Discussion	Written/ Viva voce		Pharmacology	
PE24.5	Discuss the role of antibiotics, antispasmodics, anti-secretory drugs, probiotics, anti- emetics in acute diarrheal diseases	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology, Microbiology	
PE24.8	Discuss the causes, clinical presentation and management of dysentery in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology, Microbiology	
PE34.3	Discuss the various regimens for management of Tuberculosis as per National Guidelines	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology, Community Medicine, Pharmacology	Respiratory Medicine
PE34.4	Discuss the preventive strategies adopted and the objectives and outcome of the National Tuberculosis Control Program	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology, Community Medicine, Pharmacology	Respiratory Medicine
					General Surgery				
SU13.2	Discuss the Principles of immunosuppressive therapy. Enumerate indications, describe surgical principles, management of organ transplantation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology, Pharmacology	
					Physical Medicine & Rehabilitation				

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PM3.5	Enumerate the indications and describe the therapies for spasticity including medications, serial casts, nerve blocks, botulinum toxin injections	K	KH	Y	Lectures, Small group discussion			Pharmacology	Pediatrics, Orthopedics
PM7.6	Enumerate the indications and describe the pharmacology and side effects of commonly used drugs in neuropathic bladder	K	KH	Y	Lectures, Small group discussion	Written / Viva voce		Pharmacology	General Medicine
					Respiratory Medicine				
CT1.4	Describe the epidemiology, the predisposing factors and microbial and therapeutic factors that determine resistance to drugs	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology, Pharmacology	
CT1.14	Describe and discuss the pharmacology of various antituberculous agents, their indications, contraindications, interactions and adverse reactions	K	KH	Y	Lecture, Small group discussion	short note/ Viva voce		Pharmacology, Microbiology	
CT1.15	Prescribe an appropriate antituberculosis regimen based on the location of disease, smear positivity and negativity and co-morbidities based on current national guidelines including directly observed tuberculosis therapy (DOTS)	K	SH	Y	Bedside clinic, Small group discussion, Lecture	Skill assessment		Pharmacology, Community Medicine	
CT2.16	Discuss and describe therapies for OAD including bronchodilators, leukotriene inhibitors, mast cell stabilisers, theophylline, inhaled and systemic steroids, oxygen and immunotherapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
					Orthopaedics				

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
OR3.1	Describe and discuss the aetiopathogenesis, clinical features, Investigations and principles of management of Bone and Joint infections a) Acute Osteomyelitis b) Subacute osteomyelitis c) Acute Suppurative arthritis d) Septic arthritis & HIV infection e) Spirochaetal infection f) Skeletal Tuberculosis	K/S	K/KH/SH	Y	Lecture, Small group Discussion,Video assisted lecture	Written/ Viva voce/ OSCE	_	Pathology, Microbiology	General surgery

PATHOLOGY (CODE: PA)

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PATHOLOGY									
Topic: Introduction to Pathology		**Number of competencies: (03)**				**Number of procedures that require certification: (NIL)**			
PA1.1	Describe the role of a pathologist in diagnosis and management of disease	K	K	Y	Departmental orientation	Written/ Viva voce			
PA1.2	Enumerate common definitions and terms used in Pathology	K	K	Y	Lecture, Small group discussion	Written/ Viva voce			
PA1.3	Describe the history and evolution of Pathology	K	K	N	Lecture, Small group discussion	Written/ Viva voce			
Topic: Cell Injury and Adaptation		**Number of competencies: (08)**				**Number of procedures that require certification: (NIL)**			
PA2.1	Demonstrate knowledge of the causes, mechanisms, types and effects of cell injury and their clinical significance	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA2.2	Describe the etiology of cell injury. Distinguish between reversible-irreversible injury: mechanisms; morphology of cell injury	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA2.3	Intracellular accumulation of fats, proteins, carbohydrates, pigments	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA2.4	Describe and discuss Cell death- types, mechanisms, necrosis, apoptosis (basic as contrasted with necrosis), autolysis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA2.5	Describe and discuss pathologic calcifications, gangrene	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA2.6	Describe and discuss cellular adaptations: atrophy, hypertrophy, hyperplasia, metaplasia, dysplasia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA2.7	Describe and discuss the mechanisms of cellular aging and apoptosis	K	KH	N	Lecture, Small group discussion	Written/ Viva voce			
PA2.8	Identify and describe various forms of cell injuries, their manifestations and consequences in gross and microscopic specimens	S	SH	Y	DOAP session	Skill assessment			
Topic: Amyloidosis		**Number of competencies: (02)**				**Number of procedures that require certification: (NIL)**			
PA3.1	Describe the pathogenesis and pathology of amyloidosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA3.2	Identify and describe amyloidosis in a pathology specimen	S	SH	N	DOAP session	Skill assessment			
Topic: Inflammation		**Number of competencies:(04)**				**Number of procedures that require certification: (NIL)**			
PA4.1	Define and describe the general features of acute and chronic inflammation including stimuli, vascular and cellular events	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA4.2	Enumerate and describe the mediators of acute inflammation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA4.3	Define and describe chronic inflammation including causes, types, non-specific and granulomatous; and enumerate examples of each	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA4.4	Identify and describe acute and chronic inflammation in gross and microscopic specimens	S	SH	Y	DOAP session	Skill assessment			
Topic: Healing and repair		**Number of competencies: (01)**				**Number of procedures that require certification:(NIL)**			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA5.1	Define and describe the process of repair and regeneration including wound healing and its types	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
Topic: Hemodynamic disorders		**Number of competencies: (07)**				**Number of procedures that require certification :(NIL)**			
PA6.1	Define and describe edema, its types, pathogenesis and clinical correlations	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA6.2	Define and describe hyperemia, congestion, hemorrhage	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA6.3	Define and describe shock, its pathogenesis and its stages	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA6.4	Define and describe normal haemostasis and the etiopathogenesis and consequences of thrombosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA6.5	Define and describe embolism and its causes and common types	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA6.6	Define and describe Ischaemia/infarction its types, etiology, morphologic changes and clinical effects	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA6.7	Identify and describe the gross and microscopic features of infarction in a pathologic specimen	S	SH	Y	DOAP session	Skill Assessment			
Topic: Neoplastic disorders		**Number of competencies: (05)**				**Number of procedures that require certification: (NIL)**			
PA7.1	Define and classify neoplasia. Describe the characteristics of neoplasia including gross, microscopy, biologic, behaviour and spread. Differentiate between benign from maignant neoplams	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA7.2	Describe the molecular basis of cancer	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA7.3	Enumerate carcinogens and describe the process of carcinogenesis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA7.4	Describe the effects of tumor on the host including paraneoplastic syndrome	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA7.5	Describe immunology and the immune response to cancer	K	KH	N	Lecture, Small group discussion	Written/ Viva voce			Microbiology
	Topic: Basic diagnostic cytology		**Number of competencies:(03)**			**Number of procedures that require certification:(NIL)**			
PA8.1	Describe the diagnostic role of cytology and its application in clinical care	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA8.2	Describe the basis of exfoliative cytology including the technique & stains used	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce/ Skill assessment		General Surgery	
PA8.3	Observe a diagnostic cytology and its staining and interpret the specimen	S	KH	Y	DOAP session	Skill assessment			
Topic: Immunopathology and AIDS		**Number of competencies: (07)**				**Number of procedures that require certification: (NIL)**			
PA9.1	Describe the principles and mechanisms involved in immunity	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	Microbiology
PA9.2	Describe the mechanism of hypersensitivity reactions	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology
PA9.3	Describe the HLA system and the immune principles involved in transplant and mechanism of transplant rejection	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology
PA9.4	Define autoimmunity. Enumerate autoimmune disorders	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA9.5	Define and describe the pathogenesis of systemic Lupus Erythematosus	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA9.6	Define and describe the pathogenesis and pathology of HIV and AIDS	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA9.7	Define and describe the pathogenesis of other common autoimmune diseases	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
Topic: Infections and Infestations		**Number of competencies: (04)**			**Number of procedures that require certification:(NIL)**				
PA10.1	Define and describe the pathogenesis and pathology of malaria	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA10.2	Define and describe the pathogenesis and pathology of cysticercosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA10.3	Define and describe the pathogenesis and pathology of leprosy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA10.4	Define and describe the pathogenesis and pathology of common bacterial, viral, protozoal and helminthic diseases	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
Topic: Genetic and paediatric diseases		**Number of competencies: (03)**			**Number of procedures that require certification :(NIL)**				
PA11.1	Describe the pathogenesis and features of common cytogenetic abnormalities and mutations in childhood	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	
PA11.2	Describe the pathogenesis and pathology of tumor and tumour-like conditions in infancy and childhood	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	
PA11.3	Describe the pathogenesis of common storage disorders in infancy and childhood	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	
Topic: Environmental and nutritional diseases		**Number of competencies:(03)**			**Number of procedures that require certification:(NIL)**				

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA12.1	Enumerate and describe the pathogenesis of disorders caused by air pollution, tobacco and alcohol	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Community Medicine
PA12.2	Describe the pathogenesis of disorders caused by protein calorie malnutrition and starvation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, Pediatrics	
PA12.3	Describe the pathogenesis of obesity and its consequences	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
Topic: Introduction to haematology		**Number of competencies: (05)**				**Number of procedures that require certification:(NIL)**			
PA13.1	Describe hematopoiesis and extramedullary hematopoiesis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA13.2	Describe the role of anticoagulants in hematology	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA13.3	Define and classify anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA13.4	Enumerate and describe the investigation of anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA13.5	Perform, Identify and describe the peripheral blood picture in anemia	S	SH	Y	DOAP session	Skill assessment		General Medicine	
Topic: Microcytic anemia		**Number of competencies: (03)**				**Number of procedures that require certification:(NIL)**			
PA14.1	Describe iron metabolism	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry	
PA14.2	Describe the etiology, investigations and differential diagnosis of microcytic hypochromic anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA14.3	Identify and describe the peripheral smear in microcytic anemia	S	SH	Y	DOAP session	Skill assessment		General Medicine	
Topic: Macrocytic anemia		**Number of competencies: (04)**				**Number of procedures that require certification:(NIL)**			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA15.1	Describe the metabolism of Vitamin B12 and the etiology and pathogenesis of B12 deficiency	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, General Medicine	
PA15.2	Describe laboratory investigations of macrocytic anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA15.3	Identify and describe the peripheral blood picture of macrocytic anemia	S	SH	Y	DOAP session	Skill assessment			
PA15.4	Enumerate the differences and describe the etiology and distinguishing features of megaloblastic and non-megaloblastic macrocytic anemia	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
Topic: Hemolytic anemia		**Number of competencies: (07)**				**Number of procedures that require certification: (01)**			
PA16.1	Define and classify hemolytic anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, General Medicine	
PA16.2	Describe the pathogenesis and clinical features and hematologic indices of hemolytic anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, General Medicine	
PA16.3	Describe the pathogenesis, features, hematologic indices and peripheral blood picture of sickle cell anemia and thalassemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, General Medicine	
PA16.4	Describe the etiology pathogenesis, hematologic indices and peripheral blood picture of Acquired hemolytic anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, General Medicine	
PA16.5	Describe the peripheral blood picture in different hemolytic anaemias	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA16.6	Prepare a peripheral blood smear and identify hemolytic anaemia from it	S	P	Y	DOAP session	Skill assessment	1		
PA16.7	Discribe the correct technique to perform a cross match	S	SH	Y	Lecture, Small group discussion	Written/ Viva voce			
Topic: Aplastic anemia		**Number of competencies: (02)**				**Number of procedures that require certification:(NIL)**			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA 17.1	Enumerate the etiology, pathogenesis and findings in aplastic anemia	K	K	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA17.2	Enumerate the indications and describe the findings in bone marrow aspiration and biopsy	K	K	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
Topic: Leukocyte disorders		**Number of competencies: (02)**			**Number of procedures that require certification:(NIL)**				
PA18.1	Enumerate and describe the causes of leucocytosis leucopenia lymphocytosis and leukemoid reactions	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA`18.2	Describe the etiology, genetics, pathogenesis classification, features, hematologic features of acute and chronic leukemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
Topic: Lymph node and spleen		**Number of competencies: (07)**			**Number of procedures that require certification:(NIL)**				
PA19.1	Enumerate the causes and describe the differentiating features of lymphadenopathy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA19.2	Describe the pathogenesis and pathology of tuberculous lymphadenitis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA19.3	Identify and describe the features of tuberculous lymphadenitis in a gross and microscopic specimen	S	SH	Y	DOAP session	Skill assessment			
PA19.4	Describe and discuss the pathogenesis, pathology and the differentiating features of Hodgkin's and non-Hodgkin's lymphoma	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA19.5	Identify and describe the features of Hodgkin's lymphoma in a gross and microscopic specimen	S	SH	Y	DOAP session	Skill assessment		General Surgery	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA19.6	Enumerate and differentiate the causes of splenomegaly	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery, General Medicine	
PA19.7	Identify and describe the gross specimen of an enlarged spleen	S	SH	Y	DOAP session	Skill assessment			
Topic: Plasma cell disorders		**Number of competencies: (01)**				**Number of procedures that require certification: (NIL)**			
PA20.1	Describe the features of plasma cell myeloma	S	SH	Y	DOAP session	Skill assessment			
Topic: Hemorrhagic disorders		**Number of competencies: (05)**				**Number of procedures that require certification:(NIL)**			
PA21.1	Describe normal hemostasis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA21.2	Classify and describe the etiology, pathogenesis and pathology of vascular and platelet disorders including ITP and haemophilia's	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	
PA21.3	Differentiate platelet from clotting disorders based on the clinical and hematologic features	S	SH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA21.4	Define and describe disseminated intravascular coagulation, its laboratory findings and diagnosis of disseminated intravascular coagulation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA21.5	Define and describe disseminated intravascular coagulation, its laboratory findings and diagnosis of Vitamin K deficiency	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
Topic: Blood banking and transfusion		**Number of competencies: (07)**				**Number of procedures that require certification: (NIL)**			
PA22.1	Classify and describe blood group systems (ABO and RH)	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA22.2	Enumerate the indications, describe the principles, enumerate and demonstrate the steps of compatibility testing	S	SH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA22.4	Enumerate blood components and describe their clinical uses	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery, General Medicine	
PA22.5	Enumerate and describe infections transmitted by blood transfusion	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology
PA22.6	Describe transfusion reactions and enumerate the steps in the investigation of a transfusion reaction	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA22.7	Enumerate the indications and describe the principles and procedure of autologous transfusion	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
Topic:Clinical Pathology		**Number of competencies: (03)**				**Number of procedures that require certification: (NIL)**			
PA23.1	Describe abnormal urinary findings in disease states and identify and describe common urinary abnormalities in a clinical specimen	S	SH	Y	DOAP session	Skill Assessment			
PA23.2	Describe abnormal findings in body fluids in various disease states	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
PA23.3	Describe and interpret the abnormalities in a panel containing semen analysis, thyroid function tests, renal function tests or liver function tests	S	SH	Y	DOAP session	Skill Assessment			
Topic: Gastrointestinal tract		**Number of competencies: (07)**				**Number of procedures that require certification: (NIL)**			
PA24.1	Describe the etiology, pathogenesis, pathology and clinical features of oral cancers	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Dentistry	
PA24.2	Describe the etiology, pathogenesis, pathology, microbiology, clinical and microscopic features of peptic ulcer disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA24.3	Describe and identify the microscopic features of peptic ulcer	S	SH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA24.4	Describe and etiology and pathogenesis and pathologic features of carcinoma of the stomach	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA24.5	Describe and etiology and pathogenesis and pathologic features of Tuberculosis of the intestine	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA24.6	Describe and etiology and pathogenesis and pathologic and distinguishing features of Inflammatory bowel disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA24.7	Describe the etiology, pathogenesis, pathology and distinguishing features of carcinoma of the colon	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
Topic: Hepatobiliary system		**Number of competencies: (06)**				**Number of procedures that require certification: (01)**			
PA25.1	Describe bilirubin metabolism, enumerate the etiology and pathogenesis of jaundice, distinguish between direct and indirect hyperbilirubinemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, General Medicine	
PA25.2	Describe the pathophysiology and pathologic changes seen in hepatic failure and their clincial manifestations, complications and consequences	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, General Surgery	
PA25.3	Describe the etiology and pathogenesis of viral and toxic hepatitis: distinguish the causes of hepatitis based on the clinical and laboratory features. Describe the pathology, complications and consequences of hepatitis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA25.4	Describe the pathophysiology, pathology and progression of alcoholic liver disease including cirrhosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, General Surgery	
PA25.5	Describe the etiology, pathogenesis and complications of portal hypertension	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, General Surgery	
PA25.6	Interpret liver function and viral hepatitis serology panel. Distinguish obstructive from non-obstructive jaundice based on clinical features and liver function tests	S	P	Y	DOAP session	Skill assessment	1	General Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
Topic: Respiratory system		**Number of competencies: (07)**				**Number of procedures that require certification: (NIL)**			
PA26.1	Define and describe the etiology, types, pathogenesis, stages, morphology and complications of pneumonia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA26.2	Describe the etiology, gross and microscopic appearance and complications of lung abscess	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA26.3	Define and describe the etiology, types, pathogenesis, stages, morphology and complications and evaluation of Obstructive airway disease (OAD) and bronchiectasis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	Microbiology
PA26.4	Define and describe the etiology, types, pathogenesis, stages, morphology microscopic appearance and complications of tuberculosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA26.5	Define and describe the etiology, types, exposure, environmental influence, pathogenesis, stages, morphology, microscopic appearance and complications of Occupational lung disease	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine, Community Medicine	
PA26.6	Define and describe the etiology, types, exposure, genetics environmental influence, pathogenesis, stages, morphology, microscopic appearance,metastases and complications of tumors of the lung and pleura	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA26.7	Define and describe the etiology, types, exposure, genetics environmental influence, pathogenesis, morphology, microscopic appearance and complications of mesothelioma	K	KH	N	Lecture, Small group discussion	Written / Viva voce		General Medicine, Community Medicine	
Topic: Cardiovascular system		**Number of competencies: (10)**				**Number of procedures that require certification: (NIL)**			
PA27.1	Distinguish arteriosclerosis from atherosclerosis. Describe the pathogenesis and pathology of various causes and types of arteriosclerosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA27.2	Describe the etiology, dynamics, pathology types and complications of aneurysms including aortic aneurysms	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA27.3	Describe the etiology, types, stages pathophysiology, pathology and complications of heart failure	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Physiology	
PA27.4	Describe the etiology, pathophysiology, pathology, gross and microscopic features, criteria and complications of rheumatic fever	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA27.5	Describe the epidemiology, risk factors, etiology, pathophysiology, pathology, presentations, gross and microscopic features, diagnostic tests and complications of ischemic heart disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA27.6	Describe the etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of infective endocarditis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA27.7	Describe the etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of pericarditis and pericardial effusion	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA27.8	Interpret abnormalities in cardiac function testing in acute coronary syndromes	S	SH	Y	DOAP session	Skill Assessment		Physiology, General Medicine	
PA27.9	Classify and describe the etiology, types, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of cardiomyopathies	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Physiology	
PA27.10	Describe the etiology, pathophysiology, pathology features and complications of syphilis on the cardiovascular system	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
Topic: Urinary Tract		**Number of competencies: (16)**				**Number of procedures that require certification: (NIL)**			
PA28.1	Describe the normal histology of the kidney	K	K	Y	Lecture, Small group discussion	Written/ Viva voce			
PA28.2	Define, classify and distinguish the clinical syndromes and describe the etiology, pathogenesis, pathology, morphology, clinical and laboratory and urinary findings, complications of renal failure	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA28.3	Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory urinary findings, progression and complications of acute renal failure	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA28.4	Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory urinary findings progression and complications of chronic renal failure	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA28.5	Define and classify glomerular diseases. Enumerate and describe the etiology, pathogenesis, mechanisms of glomerular injury, pathology, distinguishing features and clinical manifestations of glomerulonephritis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	
PA28.6	Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of IgA nephropathy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA28.7	Enumerate and describe the findings in glomerular manifestations of systemic disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA28.8	Enumerate and classify diseases affecting the tubular interstitium	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA28.9	Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of acute tubular necrosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA28.10	Describe the etiology, pathogenesis, pathology, laboratory findings, distinguishing features progression and complications of acute and chronic pyelonephritis and reflux nephropathy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy, General Surgery	
PA28.11	Define classify and describe the etiology, pathogenesis pathology, laboratory, urinary findings, distinguishing features progression and complications of vascular disease of the kidney	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA28.12	Define classify and describe the genetics, inheritance, etiology, pathogenesis, pathology, laboratory, urinary findings, distinguishing features, progression and complications of cystic disease of the kidney	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Pediatrics	
PA28.13	Define classify and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, distinguishing features progression and complications of renal stone disease and obstructive uropathy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA28.14	Classify and describe the etiology, genetics, pathogenesis, pathology, presenting features, progression and spread of renal tumors	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	
PA28.15	Describe the etiology, genetics, pathogenesis, pathology, presenting features and progression of thrombotic angiopathies	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
PA28.16	Describe the etiology, genetics, pathogenesis, pathology, presenting features and progression of urothelial tumors	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
Topic: Male Genital Tract		**Number of competencies: (05)**			**Number of procedures that require certification: (NIL)**				
PA29.1	Classify testicular tumors and describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of testicular tumors	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA29.2	Describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the penis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA29.3	Describe the pathogenesis, pathology, hormonal dependency presenting and distinguishing features, urologic findings & diagnostic tests of benign prostatic hyperplasia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA29.4	Describe the pathogenesis, pathology, hormonal dependency presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the prostate	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA29.5	Describe the etiology, pathogenesis, pathology and progression of prostatitis	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
Topic: Female Genital Tract		**Number of competencies: (09)**			**Number of procedures that require certification: (NIL)**				
PA30.1	Describe the epidemiology, pathogenesis, etiology, pathology, screening, diagnosis and progression of carcinoma of the cervix	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	
PA30.2	Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of carcinoma of the endometrium	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	
PA30.3	Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of carcinoma of the leiomyomas and leiomyosarcomas	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	
PA30.4	Classify and describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of ovarian tumors	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	
PA30.5	Describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of gestational trophoblastic neoplasms	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	
PA30.6	Describe the etiology and morphologic features of cervicitis	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	
PA30.7	Describe the etiology, hormonal dependence, features and morphology of endometriosis	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	
PA30.8	Describe the etiology and morphologic features of adenomyosis	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA30.9	Describe the etiology, hormonal dependence and morphology of endometrial hyperplasia	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	
Topic: Breast		**Number of competencies: (04)**			**Number of procedures that require certification: (NIL)**				
PA31.1	Classify and describe the types, etiology, pathogenesis, pathology and hormonal dependency of benign breast disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy, General Surgery	
PA31.2	Classify and describe the epidemiology, pathogenesis, classification, morphology, prognostic factors, hormonal dependency, staging and spread of carcinoma of the breast	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA31.3	Describe and identify the morphologic and microscopic features of carcinoma of the breast	S	SH	N	DOAP session	Skill Assessment		General Surgery	
PA31.4	Enumerate and describe the etiology, hormonal dependency and pathogenesis of gynecomastia	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pediatrics, General Medicine	
Topic: Endocrine system		**Number of competencies: (09)**			**Number of procedures that require certification: (NIL)**				
PA32.1	Enumerate, classify and describe the etiology, pathogenesis, pathology and iodine dependency of thyroid swellings	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy, Physiology, General Medicine, General Surgery	
PA32.2	Describe the etiology, cause, iodine dependency, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	
PA32.3	Describe the etiology, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis/ hypothyroidism	K	KH	Y	Lecture, Small group	Written/ Viva voce		Physiology, General Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA32.4	Classify and describe the epidemiology, etiology, pathogenesis, pathology, clinical laboratory features, complications and progression of diabetes mellitus	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	
PA32.5	Describe the etiology, genetics, pathogenesis, manifestations, laboratory and morphologic features of hyperparathyroidism	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	
PA32.6	Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications and metastases of pancreatic cancer	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
PA32.7	Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications of adrenal insufficiency	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	
PA32.8	Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications of Cushing's syndrome	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	
PA32.9	Describe the etiology, pathogenesis, manifestations, laboratory and morphologic features of adrenal neoplasms	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy, Physiology, General Medicine, General Surgery	
Topic: Bone and soft tissue		**Number of competencies: (05)**				**Number of procedures that require certification: (NIL)**			
PA33.1	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of osteomyelitis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy, Orthopaedics	Microbiology
PA33.2	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of bone tumors	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Orthopaedics	
PA33.3	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of soft tissue tumors	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Orthopaedics	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA33.4	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of Paget's disease of the bone	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Orthopaedics	
PA33.5	Classify and describe the etiology, immunology, pathogenesis, manifestations, radiologic and laboratory features, diagnostic criteria and complications of rheumatoid arthritis	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
Topic: Skin		**Number of competencies: (04)**			**Number of procedures that require certification:(NIL)**				
PA34.1	Describe the risk factors pathogenesis, pathology and natural history of squamous cell carcinoma of the skin	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Dermatology, Venereology & Leprosy	
PA34.2	Describe the risk factors pathogenesis, pathology and natural history of basal cell carcinoma of the skin	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Dermatology, Venereology & Leprosy	
PA34.3	Describe the distinguishing features between a nevus and melanoma. Describe the etiology, pathogenesis, risk factors morphology clinical features and metastases of melanoma	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Dermatology, Venereology & Leprosy	
PA34.4	Identify, distinguish and describe common tumors of the skin	S	SH	N	DOAP session	Skill Assessment		Dermatology, Venereology & Leprosy	
Topic: Central Nervous System		**Number of competencies:(03)**			**Number of procedures that require certification: (01)**				
PA35.1	Describe the etiology, types and pathogenesis, differentiating factors, CSF findings in meningitis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA35.2	Classify and describe the etiology, genetics, pathogenesis, pathology, presentation sequelae and complications of CNS tumors	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PA35.3	Identify the etiology of meningitis based on given CSF parameters	S	P	Y	DOAP session	Skill Assessment	1	General Medicine	Microbiology
Topic: Eye		**Number of competencies: (01)**				**Number of procedures that require certification:(NIL)**			
PA36.1	Describe the etiology, genetics, pathogenesis, pathology, presentation, sequelae and complications of retinoblastoma	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Ophthalmology	

Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication.
Column D: K – Knows, KH - Knows How, S - Shows how, P- performs independently,
Column F: DOAP session – Demonstrate, Observe, Assess, Perform.
Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation

Integration

				Human Anatomy					
AN5.8	Define thrombosis, infarction & aneurysm	K	KH	N	Lecture	Written		Pathology	Physiology
AN66.2	Describe the ultrastructure of connective tissue	K	KH	N	Lecture, Practical	Written		Pathology	
AN70.1	Identify exocrine gland under the microscope & distinguish between serous, mucous and mixed acini	K/S	SH	Y	Lecture, Practical	Written/ skill assessment		Pathology	
AN70.2	Identify the lymphoid tissue under the microscope & describe microanatomy of lymph node, spleen, thymus, tonsil and correlate the structure with function	K/S	SH	Y	Lecture, Practical	Written/ skill assessment		Pathology	
AN71.1	Identify bone under the microscope, Classify various types and describe the structure-function correlation of the same	K/S	SH	Y	Lecture, Practical	Written/ skill assessment		Pathology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
AN71.2	Identify cartilage under the microscope & describe various types and structure- function correlation of the same describe various types and structure-function correlation of the same	K/S	SH	Y	Lecture, Practical	Written/ skill assessment		Pathology	
Physiology									
PY1.4	Describe apoptosis – programmed cell death	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
PY2.5	Describe different types of anemia & Jaundice	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	Biochemistry
PY2.8	Describe the physiological basis of hemostasis and anticoagulants. Describe bleeding & clotting disorders (Hemophilia, purpura)	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
PY2.9	Describe different blood groups and discuss the clinical importance of blood grouping, blood banking and transfusion	K	KH	Y	Lecture, Small group discussion, ECE- Visit to blood bank	Written/ Viva voce		Pathology	
PY2.11	Estimate Hb, RBC, TLC, RBC indices, DLC, Blood groups, BT/CT	S	SH	Y	DOAP sessions	Practical/OSPE/ viva voce		Pathology	
PY2.12	Describe test for ESR, Osmotic fragility, Hematocrit. Note the findings and interpret the test results etc	K	KH	Y	Demonstration	Written/ Viva voce		Pathology	
PY2.13	Describe steps for reticulocyte and platelet count	K	KH	Y	Demonstration sessions	Written/ Viva voce		Pathology	
PY3.6	Describe the pathophysiology of Myasthenia gravis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
Biochemistry									
BI2.4	Describe and discuss enzyme inhibitors as poisons and drugs and as therapeutic enzymes	K	KH	Y	Lecture, small group discussions	Written/ Viva voce		Pathology, General Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
BI2.5	Describe and discuss the clinical utility of various serum enzymes as markers of pathological conditions	K	KH	Y	Lecture, small group discussions	Written/ Viva voce		Pathology, General Medicine	
BI2.6	Discuss use of enzymes in laboratory investigations (Enzyme-based assays)	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, General Medicine	
BI2.7	Interpret laboratory results of enzyme activities & describe the clinical utility of various enzymes as markers of pathological conditions	K	KH	Y	Lecture, Small group discussion /DOAP sessions	Written/ Viva voce		Pathology, General Medicine	
BI3.8	Discuss and interpret laboratory results of analytes associated with metabolism of carbohydrates.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, General Medicine	
BI5.2	Describe and discuss functions of proteins and structure-function relationships in relevant areas eg, hemoglobin and selected hemoglobinopathies	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Pathology, General Medicine	Physiology
BI6.11	Describe the functions of haem in the body and describe the processes involved in its metabolism and describe porphyrin metabolism	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Pathology, General Medicine	Physiology
BI6.12	Describe the major types of haemoglobin and its derivatives found in the body and their physiological/ pathological relevance	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Pathology, General Medicine	Physiology
BI6.13	Describe the functions of the kidney, liver, thyroid and adrenal glands.	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Pathology, General Medicine	Physiology, Human Anatomy
BI6.14	Describe the tests that are commonly done in clinical practice to assess the functions of kidney, liver, thyroid and adrenal glands	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Pathology, General Medicine	Physiology, Human Anatomy

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
BI6.15	Describe the abnormalities of kidney, liver, thyroid and adrenal glands	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Pathology, General Medicine	Physiology, Human Anatomy
BI7.7	Describe the role of oxidative stress in the pathogenesis of conditions such as cancer, complications of diabetes mellitus and atherosclerosis	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		General Medicine, Pathology	
BI8.1	Discuss the importance of various dietary components and explain importance of dietary fibre	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		General Medicine, Pediatrics, Pathology	
BI8.2	Describe the types and causes of protein energy malnutrition and its effects	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		General Medicine, Pediatrics, Pathology	
BI8.4	Describe the causes (including dietary habits), effects and health risks associated with being overweight/obesity	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		General Medicine, Pathology	
BI8.5	Summarize the nutritional importance of commonly used items of food including fruits and vegetables (macro-molecules & its importance)	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Community Medicine, General Medicine, Pediatrics	
BI10.1	Describe the cancer initiation, promotion oncogenes & oncogene activation	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Obstetrics & Gynaecology, General Surgery, Pathology	
BI10.2	Describe various biochemical tumor markers and the biochemical basis of cancer therapy	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Obstetrics & Gynaecology, General Surgery, Pathology	
BI10.3	Describe the cellular and humoral components of the immune system & describe the types and structure of antibody	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Obstetrics & Gynaecology, General Surgery, Pathology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
BI10.4	Describe & discuss innate and adaptive immune responses, self/non-self recognition and the central role of T-helper cells in immune responses	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		General Medicine, Pathology	Physiology
BI10.5	Describe antigens and concepts involved in vaccine development	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Pathology, Pediatrics, Microbiology	
BI11.17	Explain the basis and rationale of biochemical tests done in the following conditions: diabetes mellitus, dyslipidemia, myocardial infarction, renal failure, gout, proteinuria, nephrotic syndrome, edema, jaundice, liver diseases, pancreatitis, disorders of acid-base balance, thyroid disorders	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		General Medicine, Pathology	
Microbiology									
MI1.7	Describe the immunological mechanisms in health	K	KH	Y	Lecture	Written/ Viva voce			Pathology
MI1.8	Describe the mechanisms of immunity and response of the host immune system to infections	K	KH	Y	Lecture	Written/ Viva voce		Pediatrics	Pathology
MI2.1	Describe the etiologic agents in rheumatic fever and their diagnosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology
MI2.2	Describe the classification etio-pathogenesis, clinical features and discuss the diagnostic modalities of Infective endocarditis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology
MI2.3	Identify the microbial agents causing Rheumatic heart disease & infective Endocarditis	S	SH	Y	DOAP session	Skill assessment		General Medicine	Pathology
MI2.4	List the common microbial agents causing anemia. Describe the morphology, mode of infection and discuss the pathogenesis, clinical course, diagnosis and prevention and treatment of the common microbial agents causing Anemia	K	KH	Y	Lecture, Small group discussion	Written/ viva voce		General Medicine	Pathology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
MI2.5	Describe the etio-pathogenesis and discuss the clinical evolution and the laboratory diagnosis of kala azar, malaria, filariasis and other common parasites prevalent in India	K	KH	Y	Lecture, Small group discussion	Written/ viva voce		General Medicine	Pathology
MI2.7	Describe the epidemiology, the etio-pathogenesis, evolution, complications, opportunistic infections, diagnosis, prevention and the principles of management of HIV	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology
MI3.1	Enumerate the microbial agents causing diarrhea and dysentery. Describe the epidemiology, morphology, pathogenesis, clinical features, and diagnostic modalities of these agents	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Pediatrics	Pathology
MI3.3	Describe the enteric fever pathogens and discuss the evolution of the clinical course, the laboratory diagnosis of the diseases caused by them	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology, Pathology
MI3.4	Identify the different modalities for diagnosis of enteric fever. Choose the appropriate test related to the duration of illness	S	KH	Y	DOAP session	Skill assessment		General Medicine	Pathology
MI3.6	Describe the etio-pathogenesis of Acid Peptic disease (APD) and the clinical course. Discuss the diagnosis and management of the causative agent of APD.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology, Pathology
MI3.7	Describe the epidemiology, the etio-pathogenesis and discuss the viral markers in the evolution of Viral hepatitis. Discuss the modalities in the diagnosis, and prevention of viral hepatitis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology
MI3.8	Choose the appropriate laboratory test in the diagnosis of viral hepatitis	K	KH	Y	small group discussion, Case discussion	Written/ Viva voce/ OSPE		General Medicine	Pathology
MI5.1	Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of meningitis	K	KH	Y	Lecture	Written/ Viva voce		General Medicine, Pediatrics	Pathology
MI5.2	Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of encephalitis.	K	KH	Y	Lecture	Written/ Viva voce		General Medicine, Pediatrics	Pathology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
MI8.2	Describe the etio-pathogenesis of opportunistic infections (OI) and discuss the factors contributing to the occurrence of OI, and the laboratory diagnosis	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	Pathology
MI8.3	Describe the role of oncogenic viruses in the evolution of virus associated malignancy	K	KH	Y	Lecture	Written		General Medicine	Pathology
Community Medicine									
CM8.1	Describe and discuss the epidemiological and control measures including the use of essential laboratory tests at the primary care level for communicable diseases	K	KH	Y	Small group discussion, Lecture	Written/ Viva voce		General Medicine, Pediatrics	Microbiology, Pathology
Forensic Medicine & Toxicology									
FM2.1	Define, describe and discuss death and its types including somatic/clinical/cellular, molecular and brain-death, Cortical death and Brainstem death	K	KH	Y	Lecture, Small group discussion	Written/viva voce			Pathology
FM2.2	Describe and discuss natural and unnatural deaths	K	KH	Y	Lecture, Small group discussion	Written/viva voce			Pathology
FM2.3	Describe and discuss issues related to sudden natural deaths	K	KH	Y	Lecture, Small group discussion	Written/viva voce			Pathology
FM2.5	Discuss moment of death, modes of death-coma, asphyxia and syncope	K	KH	Y	Lecture, Small group discussion	Written/viva voce			Pathology
FM2.11	Describe and discuss autopsy procedures including post-mortem examination, different types of autopsies, aims and objectives of post-mortem examination	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/viva voce/ OSPE			Pathology
FM2.12	Describe the legal requirements to conduct post-mortem examination and procedures to conduct medico-legal post-mortem examination	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/viva voce/ OSPE			Pathology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
FM2.13	Describe and discuss obscure autopsy	K	KH	Y	Lecture, Small group discussion	Written/viva voce			Pathology
FM3.28	Describe evidences of abortion - living and dead, duties of doctor in cases of abortion, investigations of death due to criminal abortion	K	K/KH	Y	Lecture, Small group discussion	Written/viva voce		Obstetrics & Gynaecology, Pathology	
FM6.1	Describe different types of specimens and tissues to be collected both in the living and dead: body fluids (blood, urine, semen, faeces, saliva), skin, nails, tooth pulp, vaginal smear, viscera, skull, specimen for histo-pathological examination, blood grouping, HLA Typing and DNA Fingerprinting. Describe Locard's Exchange Principle	K	K/KH	Y	Lecture, Small group discussion	Written/viva voce			Pathology
FM14.7	Demonstrate & identify that a particular stain is blood and identify the species of its origin	S	KH	Y	Small group discussion, Lecture	Log book/ skill station/ Viva voce		Forensic Medicicne, Physiology	
FM14.8	Demonstrate the correct technique to perform and identify ABO & RH blood group of a person	S	SH	Y	Small group discussion, DOAP session	Log book/ skill station/ Viva voce		Forensic Medicicne, Physiology	
Dermatology, Venereology & Leprosy									
DR12.7	Identify and distinguish fixed drug eruptions and Steven Johnson syndrome from other skin lesions	S	SH	Y	Bedside clinic	Skill assessment	1	General Medicine	Pathology, Microbiology
DR14.1	Describe the etiology, pathogenesis and clinical precipitating features and classification of Urticaria and angioedema	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology, Pathology
DR16.1	Identify and distinguish skin lesions of SLE	S	SH	Y	Bedside clinic discussion	Skill assessment	2	General Medicine	Pathology
DR16.2	Identify and distinguish Raynaud's phenomenon	S	SH	Y	Bedside clinic discussion	Skill assessment	2	General Medicine	Pathology
Anesthesiology									

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
AS9.4	Enumerate blood products and describe the use of blood products in the preoperative period	K	KH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce		Pathology	General Surgery
ENT									
EN1.2	Describe the pathophysiology of common diseases in ENT	K	KH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce		Pathology	
Ophthalmology									
OP7.2	Describe and discuss the aetio-pathogenesis, stages of maturation and complications of cataract	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
OP8.1	Discuss the aetiology, pathology, clinical features and management of vascular occlusions of the retina	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy, Pathology	
Dentistry									
DE4.1	Discuss the prevalence of oral cancer and enumerate the common types of cancer that can affect tissues of the oral cavity	K	K	N	Lecture, Small group discussion	Viva voce		Pathology	ENT
DE4.2	Discuss the role of etiological factors in the formation of precancerous /cancerous lesions	K	KH	Y	Lecture, Small group discussion	Viva voce		Pathology	ENT
DE4.3	Identify potential pre-cancerous / cancerous lesions	S	SH	N	Observation, Bed side clinics	Skill assessment		Pathology	ENT
DE4.4	Counsel patients to risks of oral cancer with respect to tobacco, smoking, alcohol and other causative factors.	A/C	SH	Y	DOAP session	Document in Log book	2	Pathology	ENT
General Medicine									

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
IM1.1	Describe and discuss the epidemiology, pathogenesis clinical evolution and course of common causes of heart disease including: rheumatic/ valvular, ischemic, hypertrophic inflammatory	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM1.2	Describe and discuss the genetic basis of some forms of heart failure	K	KH	N	Lecture, Small group discussion	Written		Pathology, Physiology	
IM1.3	Describe and discuss the aetiology, microbiology, pathogenies and clinical evolution of rheumatic fever, criteria, degree of rheumatic activity and rheumatic valvular heart disease and its complications including infective endocarditis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology, Microbiology	
IM1.4	Stage heart failure	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM1.5	Describe, discuss and differentiate the processes involved in R vs L heart failure, systolic vs diastolic failure	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM1.6	Describe and discuss the compensatory mechanisms involved in heart failure including cardiac remodelling and neurohormonal adaptations	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM1.7	Enumerate, describe and discuss the factors that exacerbate heart failure including ischemia, arrythmias, anemia, thyrotoxicosis, dietary factors drugs etc.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM1.8	Describe and discuss the pathogenesis and development of common arrhythmias involved in heart failure particularly atrial fibrillation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM1.9	Describe and discuss the clinical presentation and features, diagnosis, recognition and management of acute rheumatic fever	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Microbiology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
IM2.1	Discuss and describe the epidemiology, antecedents and risk factors for atherosclerosis and ischemic heart disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology, Community Medicine	
IM2.2	Discuss the aetiology of risk factors both modifiable and non-modifiable of atherosclerosis and IHD	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM2.4	Discuss and describe the pathogenesis natural history, evolution and complications of atherosclerosis and IHD	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM2.5	Define the various acute coronary syndromes and describe their evolution, natural history and outcomes	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM3.1	Define, discuss, describe and distinguish community acquired pneumonia, nosocomial pneumonia and aspiration pneumonia	K	K	Y	Lecture , Small group discussion	short note/ Viva voce		Human Anatomy, Pathology, Microbiology	
IM3.3	Discuss and describe the pathogenesis, presentation, natural history and complications of pneumonia	K	K	Y	Lecture, Small group discussion	short note/ Viva voce		Pathology, Microbiology	
IM4.5	Describe and discuss the pathophysiology and manifestations of malignant causes of fever including hematologic and lymph node malignancies	K	KH	Y	Lecture, Small group discussion	written		Pathology, Microbiology	
IM4.12	Order and interpret diagnostic tests based on the differential diagnosis including: CBC with differential, peripheral smear, urinary analysis with sediment, Chest X ray, blood and urine cultures, sputum gram stain and cultures, sputum AFB and cultures, CSF analysis, pleural and body fluid analysis, stool routine and culture and QBC	K	SH	Y	Bed side clinic, Skill assessment	Skill assessment		Pathology, Microbiology	
IM4.16	Enumerate the indications and describe the findings in tests of inflammation and specific rheumatologic tests, serologic testing for pathogens including HIV, bone marrow aspiration and biopsy	K	KH	N	Lecture, Small group discussion	written		Pathology	
IM4.17	Observe and assist in the performance of a bone marrow aspiration and biopsy in a simulated environment	S	SH	N	skills lab	log book documentation/ DOAP session		Pathology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
IM5.1	Describe and discuss the physiologic and biochemical basis of hyperbilirubinemia	K	K	Y	Lecture, Small group discussion	Written/Viva voce		Pathology, Physiology	
IM5.2	Describe and discuss the aetiology and pathophysiology of liver injury	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM5.3	Describe and discuss the pathologic changes in various forms of liver disease	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM5.4	Describe and discuss the epidemiology, microbiology, immunology and clinical evolution of infective (viral) hepatitis	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Microbiology	
IM5.5	Describe and discuss the pathophysiology and clinical evolution of alcoholic liver disease	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM5.6	Describe and discuss the pathophysiology, clinical evolution and complications of cirrhosis and portal hypertension including ascites, spontaneous bacterial peritonitis, hepatorenal syndrome and hepatic encephalopathy	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM5.7	Enumerate and describe the causes and pathophysiology of drug induced liver injury	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Pharmacology	
IM5.12	Choose and interpret appropriate diagnostic tests including: CBC, bilirubin, function tests, Hepatitis serology and ascitic fluid examination in patient with liver diseases	S	KH	Y	Bedside clinic, DOAP session	Skill assessment		Pathology	
IM5.14	Outline a diagnostic approach to liver disease based on hyperbilirubinemia, liver function changes and hepatitis serology	S	SH	Y	Bedside clinic, Small group discussion	viva voce/ written		Pathology, Microbiology	
IM6.5	Describe and discuss the pathogenesis, evolution and clinical features of common HIV related malignancies	K	KH	Y	Lecture, Small group discussion	short notes/ Viva voce		Pathology, Microbiology	
IM6.6	Describe and discuss the pathogenesis, evolution and clinical features of common HIV related skin and oral lesions	K	KH	Y	Lecture, Small group discussion	short notes/ Viva voce		Pathology, Microbiology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
IM6.10	Choose and interpret appropriate diagnostic tests to diagnose and classify the severity of HIV-AIDS including specific tests of HIV, CDC	K	KH	Y	Bed side clinic, DOAP session, Small group discussion	written/ Skill assessment		Pathology, Microbiology	
IM6.19	Enumerate the indications of and discuss about prophylactic drugs used to prevent HIV related opportunistic infections	K/C	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Microbiology	
IM7.1	Describe the pathophysiology of autoimmune disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM7.2	Describe the genetic basis of autoimmune disease	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM7.16	Enumerate the indications for and interpret the results of: CBC, anti CCP (Anti-cyclic citrullinated peptide), RA, ANA, DNA and other tests of autoimmunity	K	SH	Y	Bed side clinic, small group	Skill assessment/ written		Pathology	
IM8.1	Describe and discuss the epidemiology, aetiology and the prevalence of primary and secondary hypertension	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM8.2	Describe and discuss the pathophysiology of hypertension	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM8.3	Describe and discuss the genetic basis of hypertension	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM8.4	Define and classify hypertension	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM8.5	Describe and discuss the differences between primary and secondary hypertension	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM8.7	Describe and discuss the clinical manifestations of the various aetiologies of secondary causes of hypertension	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM8.8	Describe, discuss and identify target organ damage due to hypertension	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
IM9.1	Define, describe and classify anemia based on red blood cell size and reticulocyte count	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM9.2	Describe and discuss the morphological characteristics, aetiology and prevalence of each of the causes of anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM9.6	Generate a differential diagnosis and prioritise based on clinical features that suggest a specific aetiology	S	SH	Y	Bed side clinic, DOAP session, Small group discussion	Skill assessment/ written		Pathology	
IM9.7	Describe the appropriate diagnostic work up based on the presumed aetiology	S	SH	Y	Bed side clinic, DOAP session	Skill assessment/ written		Pathology	
IM9.8	Describe and discuss the meaning and utility of various components of the hemogram	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce/ Skill assessment		Pathology	
IM9.9	Describe and discuss the various tests for iron deficiency	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce/ Skill assessment		Pathology	
IM9.10	Order and interpret tests for anemia including hemogram, red cell indices, reticulocyte count, iron studies, B12 and folate.	S	SH	Y	Bed side clinic, DOAP session	Skill assessment/ written		Pathology	
IM9.11	Describe, perform and interpret a peripheral smear and stool occult blood	S	SH	P	Bed side clinic, DOAP session	Skill assessment/ written		Pathology	
IM9.12	Describe the indications and interpret the results of a bone marrow aspirations and biopsy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce/ Skill assessment		Pathology	
IM9.13	Describe, develop a diagnostic plan to determine the aetiology of anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce/ Skill assessment		Pathology	
IM9.18	Describe the indications for blood transfusion and the appropriate use of blood components	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce/ Skill assessment		Pathology	
IM10.1	Define, describe and differentiate between acute and chronic renal failure	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
IM10.2	Classify, describe and differentiate the pathophysiologic causes of acute renal failure	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM10.3	Describe the pathophysiology and causes of pre renal ARF, renal and post renal ARF	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM10.4	Describe the evolution, natural history and treatment of ARF	K	KH	Y	Lecture, small group	Written/ Viva voce		Pathology	
IM10.5	Describe and discuss the aetiology of CRF	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM10.6	Stage Chronic Kidney Disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM10.7	Describe and discuss the pathophysiology and clinical findings of uraemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM10.8	Classify, describe and discuss the significance of proteinuria in CKD	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM10.9	Describe and discuss the pathophysiology of anemia and hyperparathyroidism in CKD	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM10.10	Describe and discuss the association between CKD glycemia and hypertension	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM10.11	Describe and discuss the relationship between CAD risk factors and CKD and in dialysis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM10.16	Enumerate the indications for and interpret the results of: renal function tests, calcium, phosphorus, PTH, urine electrolytes, osmolality, Anion gap	K	KH	Y	DOAP session, Small group discussion	Skill assessment/ Written/ Viva voce		Pathology	
IM10.17	Describe and calculate indices of renal function based on available laboratories including FENa (Fractional Excretion of Sodium) and CrCl (Creatinine Clearance)	S	SH	Y	DOAP session, Small group discussion	Skill assessment/ Written/ Viva voce		Pathology	
IM11.2	Describe and discuss the epidemiology and pathogenesis and risk factors and clinical evolution of type 1 diabetes	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
IM11.3	Describe and discuss the epidemiology and pathogenesis and risk factors, economic impact and clinical evolution of type 2 diabetes	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM11.5	Describe and discuss the pathogenesis and temporal evolution of microvascular and macrovascular complications of diabetes	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM11.11	Order and interpret laboratory tests to diagnose diabetes and its complications including: glucoses, glucose tolerance test, glycosylated hemoglobin, urinary micro albumin, ECG, electrolytes, ABG, ketones, renal function tests and lipid profile	S	SH	Y	Bed side clinic, DOAP session, Small group discussion	Skill assessment		Pathology	
IM11.12	Perform and interpret a capillary blood glucose test	S	P	Y	Bed side clinic, DOAP session, Small group discussion	Skill assessment	2	Pathology, Biochemistry	
IM11.13	Perform and interpret a urinary ketone estimation with a dipstick	S	P	Y	Bed side clinic, DOAP session	Skill assessment	2	Pathology, Biochemistry	
IM11.22	Enumerate the causes of hypoglycaemia and describe the counter hormone response and the initial approach and treatment	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM12.1	Describe the epidemiology and pathogenesis of hypothyroidism and hyperthyroidism including the influence of iodine deficiency and autoimmunity in the pathogenesis of thyroid disease	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM12.3	Describe and discuss the physiology of the hypothalamo-pituitary - thyroid axis, principles of thyroid function testing and alterations in physiologic function	K	K	Y	Lecture, Small group discussion	short notes		Pathology, Physiology	
IM13.1	Describe the clinical epidemiology and inherited & modifiable risk factors for common malignancies in India	K	K	Y	Lecture, Small group discussion	short note/ Viva voce		Pathology, Biochemistry	
IM13.2	Describe the genetic basis of selected cancers	K	K	N	Lecture, Small group discussion	short note/ Viva voce		Pathology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
IM13.3	Describe the relationship between infection and cancers	K	K	Y	Lecture, Small group discussion	short note/ Viva voce		Pathology, Microbiology	
IM13.4	Describe the natural history, presentation, course, complications and cause of death for common cancers	K	K	Y	Lecture, Small group discussion	Short note/ Viva voce		Pathology	
IM13.15	Describe the need, tests involved, their utility in the prevention of common malignancies	K	KH	Y	Bedside clinic, small group discussion	short note/ Viva voce		Pathology	
IM14.2	Describe and discuss the aetiology of obesity including modifiable and non-modifiable risk factors and secondary causes	K	K	Y	Lecture, Small group discussion	short note/ Viva voce		Pathology	
IM14.3	Describe and discuss the monogenic forms of obesity	K	K	N	Lecture, Small group discussion	short note/ Viva voce		Pathology	
IM14.4	Describe and discuss the impact of environmental factors including eating habits, food, work, environment and physical activity on the incidence of obesity	K	K	Y	Lecture, Small group discussion	Short note/ Viva voce		Pathology, Community Medicine	
IM14.5	Describe and discuss the natural history of obesity and its complications	K	K	Y	Lecture, Small group discussion	short note/ Viva voce		Pathology	
IM15.1	Enumerate, describe and discuss the aetiology of upper and lower GI bleeding	K	K	Y	Lecture, Small group discussion	short note/ Viva voce		Pathology	General Surgery
IM15.2	Enumerate, describe and discuss the evaluation and steps involved in stabilizing a patient who presents with acute volume loss and GI bleed	S	SH	Y	DOAP session, Small group discussion, Lecture	Written/ Viva voce/ Skill assessment		Pathology	General Surgery
IM15.3	Describe and discuss the physiologic effects of acute blood and volume loss	K	K	Y	Lecture, Small group discussion	Short note/ viva voce		Pathology, Physiology	General Surgery
IM15.9	Choose and interpret diagnostic tests based on the clinical diagnosis including complete blood count, PT and PTT, stool examination, occult blood, liver function tests, H.pylori test	S	SH	Y	Bedside clinic, DOAP session, Small group discussion	Skill assessment/ Short note/ Viva voce		Pathology	General Surgery

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
IM15.11	Develop document and present a treatment plan that includes fluid resuscitation, blood and blood component transfusion and specific therapy for arresting blood loss	S	KH	Y	Lecture, Small group discussion	Short note/ viva voce		Pathology	General Surgery
IM15.12	Enumerate the indications for whole blood, component and platelet transfusion and describe the clinical features and management of a mismatched transfusion	K	K	Y	Lecture, Small group discussion	Short note/ viva voce		Pathology	General Surgery
IM15.13	Observe cross matching and blood / blood component transfusion	S	SH	Y	Bedside clinic	Short note/ Viva voce/ Skill assessment		Pathology	General Surgery
IM16.4	Elicit and document and present an appropriate history that includes the natural history, dietary history, travel, sexual history and other concomitant illnesses	S	SH	Y	Bedside clinic skills lab	Skill assessment		Microbiology, Pathology	
IM16.8	Choose and interpret diagnostic tests based on the clinical diagnosis including complete blood count, and stool examination	S	SH	Y	Bedside clinic, Skills lab, Small group discussion	Skill assessment/ Short note/ Viva voce		Microbiology, Pathology	
IM16.12	Enumerate and discuss the indications for further investigations including antibodies, colonoscopy, diagnostic imaging and biopsy in the diagnosis of chronic diarrhea	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	General Surgery
IM16.15	Distinguish, based on the clinical presentation, Crohn's disease from ulcerative colitis	S	SH	Y	Lecture, Small group discussion	Short note/ Viva voce		Pathology	General Surgery
IM17.7	Enumerate the indications and describe the findings in the CSF in patients with meningitis	K	K	Y	Small group, Bedside clinic	Skill Assessment		Microbiology, Pathology	
IM17.8	Demonstrate in a mannequin or equivalent the correct technique for performing a lumbar puncture	S	SH	Y	DOAP session	Skill assessment		Microbiology, Pathology	
IM17.9	Interpret the CSF findings when presented with various parameters of CSF fluid analysis	S	SH	Y	Small group discussion, Bedside clinic	Skill assessment		Microbiology, Pathology	
IM18.2	Classify cerebrovascular accidents and describe the aetiology, predisposing genetic and risk factors pathogenesis of hemorrhagic and non hemorrhagic stroke	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
IM18.3	Elicit and document and present an appropriate history including onset, progression precipitating and aggravating relieving factors, associated symptoms that help identify the cause of the cerebrovascular accident	S	SH	Y	Bedside clinic	Skill assessment		Pathology	
IM22.1	Enumerate the causes of hypercalcemia and distinguish the features of PTH vs non PTH mediated hypercalcemia	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
IM22.2	Describe the aetiology, clinical manifestations, diagnosis and clinical approach to primary hyperparathyroidism	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology	General Surgery
IM22.4	Enumerate the components and describe the genetic basis of the multiple endocrine neoplasia syndrome	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology	
IM25.7	Order and interpret diagnostic tests based on the differential diagnosis including: CBC with differential, blood biochemistry, peripheral smear, urinary analysis with sediment, Chest X ray, blood and urine cultures, sputum gram stain and cultures, sputum AFB and cultures, CSF analysis, pleural and body fluid analysis, stool routine and culture and QBC	K	SH	Y	Bed side clinic, Skill assessment	Skill assessment		Pathology, Microbiology	
Obstetrics & Gynaecology									
OG10.2	Enumerate the indications and describe the appropriate use of blood and blood products, their complications and management	K	KH	Y	Lecture, Small group discussion			Pathology	
Pediatrics									
PE11.1	Describe the common etiology, clinical features and management of obesity in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Biochemistry, Pathology	
PE11.2	Discuss the risk approach for obesity and discuss the prevention strategies	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PE12.7	Describe the causes, clinical features, diagnosis and management of deficiency /excess of Vitamin D (Rickets and Hypervitaminosis D)	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, Physiology, Pathology	
PE12.8	Identify the clinical features of dietary deficiency of Vitamin D	S	p	Y	Bedside clinics, Skills lab	Document in log book	3	Biochemistry, Physiology Pathology	
PE12.9	Assess patients with Vitamin D deficiency, diagnose, classify and plan management	S	SH	Y	Bed side clinics	Document in log book		Biochemistry, Physiology, Pathology	
PE12.13	Discuss the RDA , dietary sources of Vitamin K and their role in Health and disease	K	K	N	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, Physiology, Pathology	
PE12.14	Describe the causes, clinical features, diagnosis, management and prevention of Deficiency of Vitamin K	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, Physiology, Pathology	
PE13.1	Discuss the RDA, dietary sources of Iron and their role in health and disease	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Biochemistry	
PE13.2	Describe the causes, diagnosis and management of Fe deficiency	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology Biochemistry	
PE13.3	Identify the clinical features of dietary deficiency of Iron and make a diagnosis	S	SH	Y	Bed side clinics, Skill Lab	Document in log book		Pathology, Biochemistry	
PE13.4	Interpret hemogram and Iron Panel	S	P	Y	Bed side clinic, Small group discussion	Skill Assessment	5	Pathology, Biochemistry	
PE13.5	Propose a management plan for Fe Deficiency Anaemia	S	SH	Y	Bed side clinics, Skill lab	Skill Assessment		Pathology, Pharmacology	
PE21.2	Enumerate the etio-pathogenesis, clinical features, complications and management of Acute post streptococcal Glomerular Nephritis in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
PE21.3	Discuss the approach and referral criteria to a child with Proteinuria	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PE21.5	Enumerate the etio-pathogenesis clinical features, complications and management of Acute Renal Failure in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
PE21.6	Enumerate the etio-pathogenesis, clinical features, complications and management of Chronic renal Failure in Children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
PE21.7	Enumerate the etio-pathogenesis clinical features, complications and management of Wilms Tumor	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
PE21.11	Perform and interpret the common analytes in a Urine examination	S	SH	Y	Bed side clinic Labs, Skill lab	Skill assessment		Biochemistry, Pathology	
PE23.1	Discuss the Hemodynamic changes, clinical presentation, complications and management of Acyanotic Heart Diseases –VSD, ASD and PDA	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
PE23.2	Discuss the Hemodynamic changes, clinical presentation, complications and management of Cyanotic Heart Diseases – Fallot's Physiology	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
PE23.3	Discuss the etio-pathogenesis, clinical presentation and management of cardiac failure in infant and children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
PE23.4	Discuss the etio-pathogenesis, clinical presentation and management of Acute Rheumatic Fever in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
PE23.5	Discuss the clinical features, complications, diagnosis, management and prevention of Acute Rheumatic Fever	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
PE23.6	Discuss the etio-pathogenesis and clinical features and management of Infective endocarditis in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology, Microbiology	
PE24.1	Discuss the etio-pathogenesis, classification, clinical presentation and management of diarrheal diseases in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Microbiology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PE24.2	Discuss the classification and clinical presentation of various types of diarrheal dehydration	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Microbiology	
PE25.1	Discuss the etio-pathogenesis, clinical presentation and management of Malabsorption in children and its causes including celiac disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
PE26.1	Discuss the etio-pathogenesis, clinical features and management of acute hepatitis in children	K	KH	Y	Lecture, Small group activity	Written/ Viva voce		Pathology, Microbiology	
PE26.2	Discuss the etio-pathogenesis, clinical features and management of Fulminant Hepatic Failure in children	K	KH	Y	Lecture, Small group activity	Written/ Viva voce		Pathology, Microbiology	
PE26.3	Discuss the etio-pathogenesis, clinical features and management of chronic liver diseases in children	K	KH	Y	Lecture, Small group activity	Written/ Viva voce		Pathology, Microbiology	
PE26.4	Discuss the etio-pathogenesis, clinical features and management of Portal Hypertension in children	K	KH	Y	Lecture, Small group activity	Written/ Viva voce		Pathology	
PE26.9	Interpret Liver Function Tests, viral markers, ultra sonogram report	S	SH	Y	Bedside clinics, Skills lab	Skill Assessment		Pathology	
PE29.1	Discuss the etio-pathogenesis, clinical features, classification and approach to a child with anaemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
PE29.2	Discuss the etio-pathogenesis, clinical features and management of Iron Deficiency anaemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
PE29.3	Discuss the etiopathogenesis, clinical features and management of VIT B12, Folate deficiency anaemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
PE29.4	Discuss the etio-pathogenesis, clinical features and management of Hemolytic anemia, Thalassemia Major, Sickle cell anaemia, Hereditary spherocytosis, Auto-immune hemolytic anaemia and hemolytic uremic syndrome	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
PE29.6	Discuss the cause of thrombocytopenia in children: describe the clinical features and management of Idiopathic Thrombocytopenic Purpura (ITP)	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology	
PE29.7	Discuss the etiology, classification, pathogenesis and clinical features of Hemophilia in children	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology	
PE29.8	Discuss the etiology, clinical presentation and management of Acute Lymphoblastic Leukemia in children	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology	
PE29.9	Discuss the etiology, clinical presentation and management of lymphoma in children	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Pathology	
General Surgery									
SU2.1	Describe pathophysiology of shock, types of shock, principles of resuscitation including fluid replacement and monitoring	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology	
SU3.1	Describe the indications and appropriate use of blood and blood products and complications of blood transfusion.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce.		Pathology	
SU5.1	Describe normal wound healing and factors affecting healing.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
SU9.1	Choose appropriate biochemical, microbiological, pathological, imaging investigations and interpret the investigative data in a surgical patient	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, Microbiology, Pathology	
SU22.2	Describe the etiopathogenesis of thyroidal swellings	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology,	
Respiratory Medicine									
CT2.1	Define and classify obstructive airway disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
CT2.2	Describe and discuss the epidemiology, risk factors and evolution of obstructive airway disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
CT2.4	Describe and discuss the physiology and pathophysiology of hypoxia and hypercapnia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
CT2.5	Describe and discuss the genetics of alpha 1 antitrypsin deficiency in emphysema	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology	
CT2.6	Describe the role of the environment in the cause and exacerbation of obstructive airway disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
CT2.7	Describe and discuss allergic and non-allergic precipitants of obstructive airway disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology,	
CT2.11	Describe, discuss and interpret pulmonary function tests	S	SH	Y	Bed side clinic, DOAP session	Skill assessment		Physiology, Pathology	
Orthopaedics									
OR3.1	Describe and discuss the aetiopathogenesis, clinical features, investigations and principles of management of Bone and Joint infections a) Acute Osteomyelitis b) Subacute osteomyelitis c) Acute Suppurative arthritis d) Septic arthritis & HIV infection e) Spirochaetal infection f) Skeletal Tuberculosis	K/S	K/KH/SH	Y	Lecture, Small group discussion, Video assisted lecture	Written/ Viva voce/ OSCE		Pathology, Microbiology	General surgery
OR4.1	Describe and discuss the clinical features, investigation and principles of management of Tuberculosis affecting major joints (Hip, Knee) including cold abcess and caries spine	K	K/KH	Y	Lecture, Small group discussion, Case discussion	Written/ Viva voce/ OSCE		Pathology	General surgery
OR10.1	Describe and discuss the aetiopathogenesis, clinical features, Investigations and principles of management of benign and malignant bone tumours and pathological fractures	K	K/KH	Y	Lecture, Small group discussion, Video assisted interactive lecture	Written/ Viva voce OSCE		Pathology	General surgery, Radiotherapy
Radiotherapy									

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core Y/N	Suggested Teaching Learning methods	Suggested Assessment methods	Number required to certify P	Vertical integration	Horizontal Integration
RT1.3	Enumerate, describe and discuss classification and staging of cancer (AJCC, FIGO etc.)	K	KH	Y	Lecture	Written/ Viva voce		Pathology	General Surgery, General Medicine
RT4.5	Describe and discuss role of radiation in management of common malignancies in India (region specific)	K	KH	Y	Lecture and Bed side clinic	Written/ Viva voce		Pathology	General Surgery, Obstetrics & Gynaecology
RT4.6	Describe and discuss radiotherapy for benign disease	K	KH	Y	Lecture	Written/ Viva voce		Pathology	General Surgery, Obstetrics & Gynaecology
RT4.7	Counsel patients regarding acute and late effects of radiation and supportive care	K/A/S	KH	Y	Bed side clinic, Group discussion	Written/ Viva voce		Pathology	General Surgery, Obstetrics & Gynaecology
RT5.1	Describe and discuss cancer prevention, screening, vaccination, cancer registry	K	K	Y	Group discussion	Written/ Viva voce		Pathology	General Surgery, Obstetrics & Gynaecology

MICROBIOLOGY (CODE: MI)

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
MICROBIOLOGY									
Topic: General Microbiology and Immunity		**Number of competencies: (11)**				**Number of procedures that require certification : (01)**			
MI1.1	Describe the different causative agents of Infectious diseases+A208, the methods used in their detection, and discuss the role of microbes in health and disease	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
MI1.2	Perform and identify the different causative agents of Infectious diseases by Gram Stain, ZN stain and stool routine microscopy	S	P	Y	DOAP session	Skill assessment	5		
MI1.3	Describe the epidemiological basis of common infectious diseases	K	KH	Y	Lecture	Written/ Viva voce			Community Medicine
MI1.4	Classify and describe the different methods of sterilization and disinfection. Discuss the application of the different methods in the laboratory, in clinical and surgical practice	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
MI1.5	Choose the most appropriate method of sterilization and disinfection to be used in specific situations in the laboratory, in clinical and surgical practice	K	KH	Y	Small group discussion, Case discussion	Written/Viva voce/ OSPE		General Surgery	
MI1.6	Describe the mechanisms of drug resistance, and the methods of antimicrobial susceptibility testing and monitoring of antimicrobial therapy	K	K	Y	Lecture, Small group discussion	Written/ Viva voce			Pharmacology
MI1.7	Describe the immunological mechanisms in health	K	KH	Y	Lecture	Written/ Viva voce			Pathology
MI1.8	Describe the mechanisms of immunity and response of the host immune system to infections	K	KH	Y	Lecture	Written/ Viva voce		Pediatrics	Pathology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
MI1.9	Discuss the immunological basis of vaccines and describe the Universal Immunisation schedule	K	KH	Y	Lecture	Written/ Viva voce		Paediatrics	
MI1.10	Describe the immunological mechanisms in immunological disorder (hypersensitivity, autoimmune disorders and immunodeficiency states) and discuss the laboratory methods used in detection.	K	KH	Y	Lecture	Written/ Viva voce		Paediatrics	
MI1.11	Describe the immunological mechanisms of transplantation and tumor immunity	K	KH	Y	Lecture	Written/ Viva voce			
Topic: CVS and Blood		**Number of competencies: (7)**				**Number of procedures that require certification : (NIL)**			
MI2.1	Describe the etiologic agents in rheumatic fever and their diagnosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology
MI2.2	Describe the classification etio-pathogenesis, clinical features and discuss the diagnostic modalities of Infective endocarditis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology
MI2.3	Identify the microbial agents causing Rheumatic Heart Disease & infective Endocarditis	S	SH	Y	DOAP session	Skill assessment		General Medicine	Pathology
MI2.4	List the common microbial agents causing anemia. Describe the morphology, mode of infection and discuss the pathogenesis, clinical course, diagnosis and prevention and treatment of the common microbial agents causing Anemia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology
MI2.5	Describe the etio-pathogenesis and discuss the clinical evolution and the laboratory diagnosis of kalaazar, malaria, filariasis and other common parasites prevalent in India	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology
MI2.6	Identify the causative agent of malaria and filariasis	K/S	SH	Y	DOAP session	Skill assessment		General Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
MI2.7	Describe the epidemiology, the etio- pathogenesis, evolution complications, opportunistic infections, diagnosis, prevention and the principles of management of HIV	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology
Topic: Gastrointestinal and hepatobiliary system		**Number of competencies: (8)**				**Number of procedures that require certification : (NIL)**			
MI3.1	Enumerate the microbial agents causing diarrhea and dysentery. Describe the epidemiology, morphology, pathogenesis, clinical features and diagnostic modalities of these agents	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Paediatrics	Pathology
MI3.2	Identify the common etiologic agents of diarrhea and dysentery	S	SH	Y	DOAP session	Skill assessment		General Medicine, Paediatrics	
MI3.3	Describe the enteric fever pathogens and discuss the evolution of the clinical course and the laboratory diagnosis of the diseases caused by them	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology, Pathology
MI3.4	Identify the different modalities for diagnosis of enteric fever. Choose the appropriate test related to the duration of illness	S	KH	Y	DOAP session	Skill assessment		General Medicine	Pathology
MI3.5	Enumerate the causative agents of food poisoning and discuss the pathogenesis, clinical course and laboratory diagnosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology
MI3.6	Describe the etio-pathogenesis of Acid peptic disease (APD) and the clinical course. Discuss the diagnosis and management of the causative agent of APD	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology, Pathology
MI3.7	Describe the epidemiology, the etio-pathogenesis and discuss the viral markers in the evolution of Viral hepatitis. Discuss the modalities in the diagnosis and prevention of viral hepatitis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pathology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
MI3.8	Choose the appropriate laboratory test in the diagnosis of viral hepatitis with emphasis on viral markers	K	KH	Y	Small group discussion, Case discussion	Written/ Viva voce/ OSPE		General Medicine	Pathology
Topic: Musculoskeletal system skin and soft tissue infections		**Number of competencies: (3)**			**Number of procedures that require certification : (NIL)**				
MI4.1	Enumerate the microbial agents causing anaerobic infections. Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of anaerobic infections	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	
MI4.2	Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of bone & joint infections	K	KH	Y	Lecture	Written/ Viva voce		Orthopaedics	
MI4.3	Describe the etio-pathogenesis of infections of skin and soft tissue and discuss the clinical course and the laboratory diagnosis	K	KH	Y	Lecture	Written/ Viva voce		Dermatology, Venereology & Leprosy, General Surgery	
Topic: Central Nervous System infections		**Number of competencies: (3)**			**Number of procedures that require certification : (NIL)**				
MI5.1	Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of meningitis	K	KH	Y	Lecture	Written/ Viva voce		General Medicine, Pediatrics	Pathology
MI5.2	Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of encephalitis	K	KH	Y	Lecture	Written/ Viva voce		General Medicine, Pediatrics	Pathology
MI5.3	Identify the microbial agents causing meningitis	S	SH	Y	DOAP session	Skill assessment		General Medicine, Pediatrics	
Topic: Respiratory tract infections		**Number of competencies: (3)**			**Number of procedures that require certification : (02)**				
MI6.1	Describe the etio-pathogenesis, laboratory diagnosis and prevention of Infections of upper and lower respiratory tract	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
MI6.2	Identify the common etiologic agents of upper respiratory tract infections (Gram Stain)	S	P	Y	DOAP session	Skill assessment	3	General Medicine	
MI6.3	Identify the common etiologic agents of lower respiratory tract infections (Gram Stain & Acid fast stain)	S	P	Y	DOAP session	Skill assessment	3	General Medicine	
Topic: Genitourinary & Sexually transmitted infections		**Number of competencies: (3)**				**Number of procedures that require certification : (NIL)**			
MI7.1	Describe the etio-pathogenesis and discuss the laboratory diagnosis of infections of genitourinary system	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
MI7.2	Describe the etio-pathogenesis and discuss the laboratory diagnosis of sexually transmitted infections. Recommend preventive measures	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Dermatology, Venereology & Leprosy, Obstetrics & Gynaecology	
MI7.3	Describe the etio-pathogenesis, clinical features, the appropriate method for specimen collection, and discuss the laboratory diagnosis of Urinary tract infections	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
Topic: Zoonotic diseases and miscellaneous		**Number of competencies: (16)**				**Number of procedures that require certification : (01)**			
MI8.1	Enumerate the microbial agents and their vectors causing Zoonotic diseases. Describe the morphology, mode of transmission, pathogenesis and discuss the clinical course, laboratory diagnosis and prevention	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
MI8.2	Describe the etio-pathogenesis of opportunistic infections (OI) and discuss the factors contributing to the occurrence of OI, and the laboratory diagnosis	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	Pathology
MI8.3	Describe the role of oncogenic viruses in the evolution of virus associated malignancy	K	KH	Y	Lecture	Written		General Medicine	Pathology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
MI8.4	Describe the etiologic agents of emerging Infectious diseases. Discuss the clinical course and diagnosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Community Medicine	
MI8.5	Define Healthcare Associated Infections (HAI) and enumerate the types. Discuss the factors that contribute to the development of HAI and the methods for prevention	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Community Medicine	
MI8.6	Describe the basics of Infection control	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Community Medicine
MI8.7	Demonstrate Infection control practices and use of Personal Protective Equipments (PPE)	S	P	Y	DOAP session	Skill assessment	3 each in (Hand hygiene & PPE)	General Surgery	Community Medicine
MI8.8	Describe the methods used and significance of assessing the microbial contamination of food, water and air	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
MI8.9	Discuss the appropriate method of collection of samples in the performance of laboratory tests in the detection of microbial agents causing infectious diseases	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
MI8.10	Demonstrate the appropriate method of collection of samples in the performance of laboratory tests in the detection of microbial agents causing Infectious diseases	S	SH	Y	DOAP session	Skill assessment			
MI8.11	Demonstrate respect for patient samples sent to the laboratory for performance of laboratory tests in the detection of microbial agents causing Infectious diseases	A	SH	Y	DOAP session	Skill assessment			
MI8.12	Discuss confidentiality pertaining to patient identity in laboratory results	A	KH	Y	Lecture, Small group discussion	Viva voce			
MI8.13	Choose the appropriate laboratory test in the diagnosis of the infectious disease	K	KH	Y	Small group discussions, Case discussion	Written/ Viva voce/ OSPE			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
MI8.14	Demonstrate confidentiality pertaining to patient identity in laboratory results	A	SH	Y	DOAP session	Skill assessment		AETCOM	
MI8.15	Choose and Interpret the results of the laboratory tests used in diagnosis of the infectious diseas	K/S	SH	Y	Small group discussion, Case discussion	Written/ Viva voce/ OSPE			
MI8.16	Describe the National Health Programs in the prevention of common infectious disease (for information purpose only as taught in CM)	K	K	Y	Lecture	Written/ Viva voce			Community Medicine
	*causative agents of Infectious diseases are inclusive of bacterial, viral, parasites and fungal agents causing various clinical conditions.								
	Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication. **Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently,** **Column F: DOAP session – Demonstrate, Observe, Assess, Perform.** **Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation**								
Integration									
	Biochemistry								
BI10.5	Describe antigens and concepts involved in vaccine development.	K	KH	Y	Lectures, Small group discussion	Written/ Viva voce		Pathology, Pediatrics, Microbiology	
	Pathology								
PA7.5	Describe the immunology and the immune response to cancer	K	KH	N	Lecture, Small group discussion	Written/ Viva voce			Microbiology
PA9.1	Describe the principles and mechanisms involved in immunity	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	Microbiology
PA9.2	Describe the mechanism of hypersensitivity reactions	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
PA9.3	Describe the HLA system and the immune principles involved in transplant and mechanism of transplant rejection	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology
PA9.6	Define and describe the pathogenesis and pathology of HIV and AIDS	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA10.1	Define and describe the pathogenesis and pathology of malaria	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA10.2	Define and describe the pathogenesis and pathology of cysticercosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA10.3	Define and describe the pathogenesis and pathology of leprosy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA10.4	Define and describe the pathogenesis and pathology of common bacterial, viral, protozoal and helminthic diseases	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA22.5	Enumerate and describe infections transmitted by blood transfusion	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology
PA26.1	Define and describe the etiology, types, pathogenesis, stages, morphology and complications of pneumonia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA26.2	Describe the etiology, gross and microscopic appearance and complications of lung abscess	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA26.3	Define and describe the etiology, types, pathogenesis, stages, morphology and complications and evaluation of Obstructive Airway Disease (OAD) and bronchiectasis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, General Medicine	Microbiology
PA26.4	Define and describe the etiology, types, pathogenesis, stages, morphology, microscopic appearance and complications of tuberculosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
PA27.4	Describe the etiology, pathophysiology, pathology, gross and microscopic features, criteria and complications of rheumatic fever	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA27.6	Describe the etiology, pathophysiology, pathology, gross and microscopic, features diagnosis and complications of infective endocarditis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA27.10	Describe the etiology, pathophysiology, pathology features and complications of syphilis on the cardiovascular system	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA33.1	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of osteomyelitis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Human Anatomy, Orthopaedics	Microbiology
PA35.1	Describe the etiology, types and pathogenesis, differentiating factors, CSF findings in meningitis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
PA35.3	Identify the etiology of meningitis based on given CSF parameters	S	P	Y	DOAP session	Skill Assessment	1	General Medicine	Microbiology
Pharmacology									
PH1.43	Describe and discuss the rational use of antimicrobials including antibiotic stewardship program	K	KH	Y	Lecture	Written/ Viva voce		General Medicine Pediatrics	Microbiology
PH1.45	Describe the dugs used in MDR and XDR Tuberculosis	K	KH	Y	Lecture	Written/ Viva voce		Respiratory Medicine	Microbiology
PH1.46	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of antileprotic drugs	K	KH	Y	Lecture	Written/ Viva voce		Dermatology, Venereology & Leprosy	Microbiology
PH1.47	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in malaria, KALA-AZAR, amebiasis and intestinal helminthiasis	K	KH	Y	Lecture	Written/ Viva voce		General Medicine	Microbiology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
PH1.48	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in UTI/ STD and viral diseases including HIV	K	KH	Y	Lecture	Written/Viva voce			Microbiology
Community Medicine									
CM3.3	Describe the aetiology and basis of water borne diseases/ jaundice/hepatitis/ diarrheal diseases	K	KH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce		Microbiology, General Medicine, Pediatrics	
CM3.6	Describe the role of vectors in the causation of diseases. Also discuss National Vector Borne disease Control Program	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
CM3.7	Identify and describe the identifying features and life cycles of vectors of Public Health importance and their control measures	S	SH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce/ Skill assessment		Microbiology	
CM5.7	Describe food hygiene	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology
CM7.7	Describe and demonstrate the steps in the Investigation of an epidemic of communicable disease and describe the principles of control measures	S	SH	Y	Small group discussion, DOAP sessions	Written/ Skill assessment		General Medicine	Microbiology
CM8.1	Describe and discuss the epidemiological and control measures including the use of essential laboratory tests at the primary care level for communicable diseases	K	KH	Y	Small group discussion, Lecture	Written/ Viva voce		General Medicine, Pediatrics	Microbiology, Pathology
CM14.1	Define and classify hospital waste	K	KH	Y	Lecture, Small group discussion, visit to hospital	Written/ Viva voce			Microbiology
CM14.2	Describe various methods of treatment of hospital waste	K	KH	Y	Lecture, Small group discussion, visit to hospital	Written/ Viva voce			Microbiology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
CM14.3	Describe laws related to hospital waste management	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology
Dermatology, Venereology & Leprosy									
DR6.1	Describe the etiology pathogenesis and diagnostic features of pediculosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	Microbiology
DR7.1	Describe the etiology microbiology pathogenesis and clinical presentations and diagnostic features of dermatophytes	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	Microbiology
DR7.2	Identify candida species in fungal scrapings and KOH mount	S	SH	Y	DOAP session	Skill assessment			Microbiology
DR7.3	Describe the pharmacology and action of antifungal (systemic and topical) agents. Enumerate side effects of antifungal therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology ,Pharmacology
DR8.1	Describe the etiology microbiology pathogenesis and clinical presentations and diagnostic features of common viral infections of the skin	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	Microbiology
DR9.1	Classify, describe the epidemiology, etiology, microbiology, pathogenesis and clinical presentations and diagnostic features of Leprosy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology, Community Medicine
DR10.1	Identify and classify syphilis based on the presentation and clinical manifestations	S	SH	Y	Bedside clinic	Skill assessment		General Medicine	Microbiology
DR10.2	Identify spirochete in a dark ground microscopy	S	SH	Y	DOAP session	Skill assessment			Microbiology
DR10.3	Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for syphilis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology, Microbiology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
DR10.6	Describe the etiology, diagnostic and clinical features of non-syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
DR10.7	Identify and differentiate based on the clinical features non-syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)	S	SH	Y	Bedside clinic	Skill assessment		General Medicine	Microbiology
DR10.8	Enumerate the indications and describe the pharmacology, indications and adverse reactions of drugs used in the non-syphilitic sexually transmitted diseases (chancroid, donovanosis and LGV)	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Pharmacology, Microbiology
DR11.1	Describe the etiology, pathogenesis and clinical features of the dermatologic manifestations of HIV and its complications including opportunistic infections	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	Microbiology
DR11.2	Identify and distinguish the dermatologic manifestations of HIV its complications, opportunistic infections and adverse reactions	S	SH	Y	Bedside clinic	Skill assessment		General Medicine	Microbiology
DR11.3	Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for dermatologic lesions in HIV	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	Pharmacology Microbiology
DR12.7	Identify and distinguish fixed drug eruptions and Steven Johnson syndrome from other skin lesions	S	SH	Y	Bedside clinic	Skill assessment		General Medicine	Pathology, Microbiology
DR14.1	Describe the etiology, pathogenesis and clinical precipitating features and classification of Urticaria and angioedema	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			Microbiology, Pathology
DR15.2	Identify staphylococcus on a gram stain	S	SH	Y	Bedside clinic	Skill assessment			Microbiology
DR15.3	Enumerate the indications and describe the pharmacology, indications and adverse reactions of topical and systemic drugs used in treatment of pyoderma	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	Microbiology, Pharmacology

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
Dentistry									
DE1.2	Discuss the role of causative microorganisms in the aetio-pathogenesis of dental caries	K	KH	Y	Lecture, Small group discussion	Viva voce		Microbiology	
DE1.4	Discuss the role of dental caries as a focus of sepsis	K	KH	Y	Lecture, Small group discussion	Viva voce		Microbiology, General Medicine	
General Medicine									
IM1.3	Describe and discuss the aetiology, microbiology, pathogenies and clinical evolution of rheumatic fever, criteria, degree of rheumatic activity and rheumatic valvular heart disease and its complications including infective endocarditis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Physiology, Microbiology	
IM1.9	Describe and discuss the clinical presentation and features, diagnosis, recognition and management of acute rheumatic fever	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
IM1.22	Assist and demonstrate the proper technique in collecting specimen for blood culture	S	SH	Y	DOAP session	Skill assessment		Microbiology	
IM1.27	Describe and discuss the role of penicillin prophylaxis in the prevention of rheumatic heart disease	K	KH	Y	Bedside clinic, Small group discussion	Written		Microbiology, Pharmacology	
IM3.1	Define, discuss, describe and distinguish community acquired pneumonia, nosocomial pneumonia and aspiration pneumonia	K	K	Y	Lecture, Small group discussion	short note/ Viva voce		Human Anatomy, Pathology, Microbiology	
IM3.2	Discuss and describe the aetiology of various kinds of pneumonia and their microbiology depending on the setting and immune status of the host	K	K	Y	Lecture, Small group discussion	short note/ Viva voce		Microbiology	
IM3.3	Discuss and describe the pathogenesis, presentation, natural history and complications of pneumonia	K	KH	Y	Lecture , Small group discussion	short note/ Viva voce		Pathology, Microbiology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
IM3.7	Order and interpret diagnostic tests based on the clinical presentation including: CBC, Chest X ray PA view, Mantoux, sputum gram stain, sputum culture and sensitivity, pleural fluid examination and culture, HIV testing and ABG	S	SH	Y	Bed side clinic, DOAP session	Skill assessment		Radiodiagnosis, Microbiology	
IM3.10	Demonstrate the correct technique in a mannequin and interpret results of a blood culture	S	SH	Y	DOAP session	Skill assessment		Microbiology	
IM3.11	Describe and enumerate the indications for further testing including HRCT, Viral cultures, PCR and specialised testing	S	SH	Y	Bed side clinic, DOAP session	Skill assessment		Radiodiagnosis, Microbiology	
IM3.12	Select, describe and prescribe based on the most likely aetiology, an appropriate empirical antimicrobial based on the pharmacology and antimicrobial spectrum	S	SH	Y	Bed side clinic, DOAP session	Skill Assessment/ Written/ Viva voce		Pharmacology, Microbiology	
IM3.13	Select, describe and prescribe based on culture and sensitivity appropriate empaling antimicrobial based on the pharmacology and antimicrobial spectrum.	S	SH	Y	Bed side clinic, DOAP session	Skill assessment/ Written/ Viva voce		Pharmacology, Microbiology	
IM3.14	Perform and interpret a sputum gram stain and AFB	S	P	Y	DOAP session	Skill assessment		Microbiology	
IM3.19	Discuss, describe and enumerate the indications and communicate to patients on pneumococcal and influenza vaccines	S/C	K	Y	Lecture, Small group discussion	Short note/ Viva voce		Microbiology	
IM4.1	Describe and discuss the febrile response and the influence of host immune status, risk factors and co-morbidities on the febrile response	K	K	Y	Lecture, Small group discussion	Written		Microbiology	
IM4.2	Describe and discuss the influence of special populations on the febrile response including: the elderly, immune suppression, malignancy and neutropenia, HIV and travel	K	K	Y	Lecture, Small group discussion	Written		Microbiology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
IM4.3	Discuss and describe the common causes, pathophysiology and manifestations of fever in various regions in India including bacterial, parasitic and viral causes (e.g. Dengue, Chikungunya, Typhus)	K	K	Y	Lecture, Small group discussion	Written		Microbiology, Community Medicine	
IM4.4	Describe and discuss the pathophysiology and manifestations of inflammatory causes of fever	K	KH	Y	Lecture, Small group discussion	Written		Microbiology	
IM4.5	Describe and discuss the pathophysiology and manifestations of malignant causes of fever including hematologic and lymph node malignancies	K	KH	Y	Lecture, Small group discussion	Written		Pathology, Microbiology	
IM4.6	Discuss and describe the pathophysiology and manifestations of malaria	K	KH	Y	Lecture, Small group discussion	Written		Microbiology	
IM4.8	Discuss and describe the pathophysiology, aetiology and clinical manifestations of fever of unknown origin (FUO) including in a normal host, neutropenic host, nosocomial host and a host with HIV disease	K	K	Y	Lecture, Small group discussion	Written		Microbiology	
IM4.9	Elicit document and present a medical history that helps delineate the aetiology of fever that includes the evolution and pattern of fever, associated symptoms, immune status, comorbidities, risk factors, exposure through occupation, travel and environment and medication use	S	SH	Y	Bed side clinic, DOAP session	Skill assessment		Microbiology	
IM4.12	Order and interpret diagnostic tests based on the differential diagnosis including: CBC with differential, peripheral smear, urinary analysis with sediment, Chest X ray, blood and urine cultures, sputum gram stain and cultures, sputum AFB and cultures, CSF analysis, pleural and body fluid analysis, stool routine and culture and QBC	K	SH	Y	Bedside clinic, Skill assessment	Skill assessment		Pathology, Microbiology	
IM4.13	Perform and interpret a sputum gram stain	S	SH	Y	DOAP session	Log book documentation		Microbiology	
IM4.14	Perform and interpret a sputum AFB	S	SH	Y	DOAP session	Log book documentation		Microbiology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
IM4.15	Perform and interpret a malarial smear	S	SH	Y	DOAP session	Log book documentation/ Skill assessment		Microbiology	
IM4.19	Assist in the collection of blood and wound cultures	S	SH	Y	DOAP session	Log book/ documentation		Microbiology	
IM4.20	Interpret a PPD (Mantoux)	S	SH	Y	DOAP session	Log book/ documentation		Microbiology	
IM4.23	Prescribe drugs for malaria based on the species identified, prevalence of drug resistance and national programs	S	SH	Y	Small group discussion	Skill assessment		Microbiology, Pharmacology	
IM4.26	Counsel the patient on malarial prevention	C	SH	Y	DOAP session	Skill assessment		Microbiology, Pharmacology	
IM5.4	Describe and discuss the epidemiology, microbiology, immunology and clinical evolution of infective (viral) hepatitis	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Microbiology	
IM5.14	Outline a diagnostic approach to liver disease based on hyperbilirubinemia, liver function changes and hepatitis serology	S	SH	Y	Bedside clinic,Small group discussion	Viva voce/ Written		Pathology, Microbiology	
IM5.17	Enumerate the indications precautions and counsel patients on vaccination for hepatitis	K/C	SH	Y	written Small group discussion	Written/ Viva voce		Microbiology	
IM6.1	Describe and discuss the symptoms and signs of acute HIV seroconversion	K	KH	Y	Lecture, Small group discussion	Short notes/ Viva voce		Microbiology	
IM6.2	Define and classify HIV AIDS based on the CDC criteria	K	KH	Y	Lecture, Small group discussion	Short notes/ Viva voce		Microbiology	
IM6.3	Describe and discuss the relationship between CDC count and the risk of opportunistic infections	K	KH	Y	Lecture, Small group discussion	Short notes/ Viva voce		Microbiology	
IM6.4	Describe and discuss the pathogenesis, evolution and clinical features of common HIV related opportunistic infections	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
IM6.10	Choose and interpret appropriate diagnostic tests to diagnose and classify the severity of HIV-AIDS including specific tests of HIV, CDC	K	KH	Y	Bedside clinic, DOAP session, Small group discussion	Written/ Skill assessment		Pathology, Microbiology	
IM6.13	Describe and enumerate the indications and side effects of drugs for bacterial, viral and other types of diarrhea	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology, Microbiology	
IM6.14	Perform and interpret a gram stain of the sputum	S	P	Y	DOAP session	Skill assessment		Microbiology	
IM6.17	Describe and discuss the principles of HAART, the classes of antiretroviral used, adverse reactions and interactions	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology, Pharmacology	
IM6.18	Describe and discuss the principles and regimens used in post exposure prophylaxis	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology, Pharmacology	
IM6.19	Enumerate the indications of and discuss about prophylactic drugs used to prevent HIV related opportunistic infections	K/C	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Microbiology	
IM13.3	Describe the relationship between infection and cancers	K	K	Y	Lecture, Small group discussion	Short notes/ Viva voce		Pathology, Microbiology	General Surgery
IM15.15	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of acid peptic disease including Helicobacter pylori	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology, Microbiology	
IM16.1	Describe and discuss the aetiology of acute and chronic diarrhea including infectious and non-infectious causes	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
IM6.13	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for bacterial, viral and other types of diarrhea	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology, Microbiology	
IM16.8	Choose and interpret diagnostic tests based on the clinical diagnosis including complete blood count, and stool examination	S	SH	Y	Bedside clinic, Skills lab, Small group discussion	Skill assessment/ Short note/ Viva voce		Microbiology, Pathology	
IM16.9	Identify common parasitic causes of diarrhea under the microscope in a stool specimen	S	SH	Y	DOAP session	Skill assessment		Microbiology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
IM16.10	Identify Vibrio cholera in a hanging drop specimen	S	SH	Y	DOAP session	Skill Assessment		Microbiology	
IM16.11	Enumerate the indications for stool cultures and blood cultures in patients with acute diarrhea	K	KH	Y	Lectures, Small group discussion	Written/ Viva voce		Microbiology	
IM16.13	Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy for parasitic causes of diarrhea	K	K	Y	Lectures, Small group discussion	Written/ Viva voce		Pharmacology, Microbiology	
IM17.7	Enumerate the indications and describe the findings in the CSF in patients with meningitis	K	K	Y	Small group discussion, Bedside clinic	Skill Assessment		Microbiology, Pathology	
IM17.8	Demonstrate in a mannequin or equivalent the correct technique for performing a lumbar puncture	S	SH	Y	DOAP session	Skill assessment		Microbiology, Pathology	
IM17.9	Interpret the CSF findings when presented with various parameters of CSF fluid analysis	S	SH	Y	Small group discussion, Bedside clinic	Skill assessment		Microbiology, Pathology	
IM25.1	Describe and discuss the response and the influence of host immune status, risk factors and comorbidities on zoonotic disease (eg. Leptospirosis, Rabies) and non febrile infectious disease (eg. Tetanus)	K	K	Y	Lecture, Small group discussion	Written		Microbiology, Community Medicine	
IM25.2	Describe and discuss the common causes pathophysiology and manifestations of these diseases	K	K	Y	Lecture, Small group discussion	Written		Microbiology, Community Medicine	
IM25.3	Describe and discuss the pathophysiology and manifestations of these diseases	K	KH	Y	Lecture, Small group discussion	Written		Microbiology	
IM25.9	Assist in the collection of blood and other specimen cultures	S	SH	Y	DOAP session	Log book documentation		Microbiology	
IM25.11	Develop an appropriate empiric treatment plan based on the patient’s clinical and immune status pending definitive diagnosis	C	SH	Y	DOAP session	Skill assessment		Microbiology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
Pediatrics									
PE19.1	Explain the components of the Universal immunization Program and the sub National Immunization Programs	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology	
PE19.2	Explain the epidemiology of Vaccine preventable diseases	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology	
PE19.3	Vaccine description with regard to classification of vaccines, strain used, dose, route, schedule, risks, benefits and side effects, indications and contraindications	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology	
PE19.4	Define cold chain and discuss the methods of safe storage and handling of vaccines	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology	
PE19.5	Discuss immunization in special situations – HIV positive children, immunodeficiency, preterm, organ transplants, those who received blood and blood products, splenectomised children, adolescents, travellers	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology	
PE21.1	Enumerate the etio-pathogenesis clinical features, complications and management of Urinary Tract infection in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
PE23.6	Discuss the etio-pathogenesis and clinical features and management of Infective endocarditis in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Physiology, Pathology, Microbiology	
PE24.1	Discuss the etio-pathogenesis, classification, clinical presentation and management of diarrheal diseases in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Microbiology	
PE24.2	Discuss the classification and clinical presentation of various types of diarrheal dehydration	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology, Microbiology	
PE24.5	Discuss the role of antibiotics, antispasmodics, anti-secretory drugs, probiotics, anti- emetics in acute diarrheal diseases	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology, Microbiology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
PE24.6	Discuss the causes, clinical presentation and management of persistent diarrhoea in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
PE24.8	Discuss the causes, clinical presentation and management of dysentery in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology, Microbiology	
PE24.12	Perform and interpret stool examination including Hanging Drop	S	P	N	Bed side clinics, Skills lab	log book	2	Microbiology	
PE26.1	Discuss the etio-pathogenesis, clinical features and management of acute hepatitis in children	K	KH	Y	Lecture, Small group activity	Written/ Viva voce		Pathology, Microbiology	
PE26.2	Discuss the etio-pathogenesis, clinical features and management of Fulminant Hepatic Failure in children	K	KH	Y	Lecture, Small group activity	Written/ Viva voce		Pathology, Microbiology	
PE26.3	Discuss the etio-pathogenesis, clinical features and management of chronic liver diseases in children	K	KH	Y	Lecture, Small group activity	Written/ Viva voce		Pathology, Microbiology	
PE26.12	Discuss the prevention of Hep B infection – Universal precautions and Immunisation	K	KH	Y	Lecture, Small group discussion activity	Written/ Viva voce		Microbiology	
PE30.1	Discuss the etio-pathogenesis, clinical features, complications, management and prevention of meningitis in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
PE30.2	Distinguish bacterial, viral and tuberculous meningitis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
PE30.13	Discuss the etio-pathogenesis, clinical features, management and prevention of Poliomyelitis in children	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
PE30.21	Interpret and explain the findings in a CSF analysis	S	SH	Y	Small group discussion	Log book		Microbiology	Respiratory Medicine
PE34.1	Discuss the epidemiology, clinical features, clinical types, complications of Tuberculosis in Children and Adolescents	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	Respiratory Medicine

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
PE34.2	Discuss the various diagnostic tools for childhood tuberculosis	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	Respiratory Medicine
PE34.3	Discuss the various regimens for management of Tuberculosis as per National Guidelines	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology, Community Medicine Pharmacology	Respiratory Medicine
PE34.4	Discuss the preventive strategies adopted and the objectives and outcome of the National Tuberculosis Control Program	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology, Community Medicine Pharmacology	Respiratory Medicine
PE34.6	Identify a BCG scar	S	P	Y	Bed side clinics, Skills lab	Skill Assessment	3	Microbiology	Respiratory Medicine
PE34.7	Interpret a Mantoux test	S	P	Y	Bed side clinics Skills lab	Skill assessment	3	Microbiology	Respiratory Medicine
PE34.9	Interpret blood tests in the context of laboratory evidence for tuberculosis	S	SH	N	Bed side clinics, Small group discussion	Log book		Microbiology	Respiratory Medicine
PE34.10	Discuss the various samples for demonstrating the organism eg Gastric Aspirate, Sputum, CSF, FNAC	K	KH	Y	Bed side clinics, Small group discussion	Written/ Viva voce		Microbiology	Respiratory Medicine
PE34.11	Perform AFB staining	S	P	Y	DOAP session	Log book/journal	3	Microbiology	Respiratory Medicine
PE34.12	Enumerate the indications and Discuss the limitation of methods of culturing M.Tuberculii	K	KH	Y	Small group discussion	Written/ Viva voce		Microbiology	
General Surgery									
SU6.1	Define and describe the aetiology and pathogenesis of surgical infections	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
SU9.1	Choose appropriate biochemical, microbiological, pathological, imaging investigations and interpret the investigative data in a surgical patient	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Biochemistry, Microbiology, Pathology	
SU13.1	Describe the immunological basis of organ transplantation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
SU13.2	Discuss the Principles of immunosuppressive therapy.Enumerate Indications, describe surgical principles, management of organ transplantation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology, Pharmacology	
SU14.1	Describe aseptic techniques, sterilization and disinfection	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
SU15.1	Describe Classification of hospital waste and appropriate methods of disposal	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
SU29.3	Describe the Clinical features, Investigations and principles of management of urinary tract infections	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Microbiology	
Orthopaedics									
OR3.1	Describe and discuss the aetiopathogenesis, clinical features, Investigations and principles of management of Bone and Joint infections a) Acute Osteomyelitis b) Subacute osteomyelitis c) Acute Suppurative arthritis d) Septic arthritis & HIV infection e) Spirochaetal infection f) Skeletal Tuberculosis	K/S	K/KH/SH	Y	Lecture, Small group discussion, Video assisted lecture	Written/ Viva voce/ OSCE		Pathology, Microbiology	
Respiratory Medicine									

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical integration	Horizontal Integration
CT1.2	Describe and discuss the microbiology of tubercle bacillus, mode of transmission, pathogenesis, clinical evolution and natural history of pulmonary and extra pulmonary forms (including lymph node, bone and CNS).	K	KH	Y	Lecture, Small group discussion	Written		Microbiology	
CT1.3	Discuss and describe the impact of confection with HIV and other co-morbid conditions like diabetes on the natural history of tuberculosis	K	K	Y	Lecture, Small group discussion	Written		Microbiology	
CT1.4	Describe the epidemiology, the predisposing factors and microbial and therapeutic factors that determine resistance to drugs	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology, Pharmacology	
CT1.7	Perform and interpret a PPD (Mantoux) and describe and discuss the indications and pitfalls of the test	S	P	Y	DOAP session	Maintenance of log book		Microbiology	
CT1.10	Perform and interpret an AFB stain	S	P	Y	DOAP session	Skill assessment	1	Microbiology	
CT1.12	Enumerate the indications for tests including: serology, special cultures and polymerase chain reaction and sensitivity testing	K	KH	Y	Small group discussion, Lecture	Short note/ Viva voce		Microbiology	
CT1.13	Describe and discuss the origins, indications, technique of administration, efficacy and complications of the BCG vaccine	K	KH	Y	Lecture, Small group discussion	Short note/ Viva voce		Microbiology	

FORENSIC MEDICINE INCLUDING TOXICOLOGY (CODE: FM)

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FORENSIC MEDICINE & TOXICOLOGY									
Topic: General Information		**Number of competencies: (11)**				**Number of procedures that require certification: (NIL)**			
FM1.1	Demonstrate knowledge of basics of Forensic Medicine like definitions of Forensic medicine, Clinical Forensic Medicine, Forensic Pathology, State Medicine, Legal Medicine and Medical Jurisprudence	K	KH	N	Lecture, Small Group Discussion	Written/ Viva voce			
FM1.2	Describe history of Forensic Medicine	K	KH	N	Lecture, Small Group Discussion	Written/ Viva voce			
FM1.3	Describe legal procedures including Criminal Procedure Code, Indian Penal Code, Indian Evidence Act, Civil and Criminal Cases, Inquest (Police Inquest and Magistrate's Inquest), Cognizable and Non-cognizable offences	K	KH	N	Lecture, Small Group Discussion	Written/ Viva voce			
FM1.4	Describe Courts in India and their powers: Supreme Court, High Court, Sessions court, Magistrate's Court, Labour Court, Family Court, Executive Magistrate Court and Juvenile Justice Board	K	KH	N	Lecture, Small Group Discussion	Written/ Viva voce			
FM1.5	Describe Court procedures including issue of Summons, conduct money, types of witnesses, recording of evidence oath, affirmation, examination in chief, cross examination, re-examination and court questions, recording of evidence & conduct of doctor in witness box	K	KH	N	Lecture, Small Group Discussion, Moot Court	Written/ Viva voce			
FM1.6	Describe Offenses in Court including Perjury; Court strictures vis-a-vis Medical Officer	K	KH	N	Lecture, Small Group Discussion	Written/ Viva voce			
FM1.7	Describe Dying Declaration & Dying Deposition	K	KH	Y	Lecture, Small Group Discussion	Written/ Viva voce			
FM1.8	Describe the latest decisions/notifications/resolutions/ circulars/standing orders related to medico-legal practice issued by Courts/Government authorities etc.	K	KH	Y	Lecture, Small Group Discussion	Written/ Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM1.9	Describe the importance of documentation in medical practice in regard to medicolegal examinations, Medical Certificates and medicolegal reports especially - maintenance of patient case records, discharge summary, prescribed registers to be maintained in Health Centres. - maintenance of medico-legal register like accident register. - documents of issuance of wound certificate - documents of issuance of drunkenness certificate. - documents of issuance of sickness and fitness certificate. - documents for issuance of death certificate. -documents of Medical Certification of Cause of Death - Form Number4 and 4A - documents for estimation of age by physical, dental and radiological examination and issuance of certificate	K	KH	Y	Lecture, Small Group Discussion	Written/ Viva voce		Radiodiagnosis, General Surgery, General Medicine, Pediatrics	
FM1.10	Select appropriate cause of death in a particular scenario by referring ICD 10 code	K	KH	Y	Lecture, Small Group Discussion	Written/ Viva voce			
FM1.11	Write a correct cause of death certificate as per ICD 10 document	S	SH	Y	Lecture, Small Group Discussion	Written/ Viva voce			
Topic: Forensic Pathology		**Number of competencies: (35)**				**Number of procedures that require certification : (NIL)**			
FM2.1	Define, describe and discuss death and its types including somatic/clinical/cellular, molecular and brain-death, Cortical Death and Brainstem Death	K	KH	Y	Lecture/Small group discussion	Written/ Viva voce		Pathology	
FM2.2	Describe and discuss natural and unnatural deaths	K	KH	Y	Lecture, Small Group Discussion	Written/ Viva voce		Pathology	
FM2.3	Describe and discuss issues related to sudden natural deaths	K	KH	Y	Lecture, Small Group Discussion	Written/ Viva voce		Pathology	
FM2.4	Describe salient features of the Organ Transplantation and The Human Organ Transplant (Amendment) Act 2011 and discuss ethical issues regarding organ donation	K	KH	Y	Lecture/Small group discussion	Written/ Viva voce		AETCOM	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM2.5	Discuss moment of death, modes of death - coma, asphyxia and syncope	K	KH	Y	Lecture, Small Group Discussion	Written/ Viva voce		Psychiatry, Pathology	
FM2.6	Discuss presumption of death and survivorship	K	KH	Y	Lecture, Small Group Discussion	Written/ Viva voce			
FM2.7	Describe and discuss suspended animation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
FM2.8	Describe and discuss postmortem changes including signs of death, cooling of body, post-mortem lividity, rigor mortis, cadaveric spasm, cold stiffening and heat stiffening	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce/ OSPE			
FM2.9	Describe putrefaction, mummification, adipocere and maceration	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce/ OSPE			
FM2.10	Discuss estimation of time since death	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce/ OSPE			
FM2.11	Describe and discuss autopsy procedures including post-mortem examination, different types of autopsies, aims and objectives of post-mortem examination	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce/ OSPE		Pathology	
FM2.12	Describe the legal requirements to conduct post-mortem examination and procedures to conduct medico-legal post-mortem examination	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce/ OSPE		Pathology	
FM2.13	Describe and discuss obscure autopsy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
FM2.14	Describe and discuss examination of clothing, preservation of viscera on post-mortem examination for chemical analysis and other medico-legal purposes, post-mortem artefacts	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce/ OSPE			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM 2.15	Describe special protocols for conduction of medico-legal autopsies in cases of death in custody or following violation of human rights as per National Human Rights Commission Guidelines	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce/ OSPE			
FM2.16	Describe and discuss examination of mutilated bodies or fragments, charred bones and bundle of bones	K	KH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce/ OSPE			
FM2.17	Describe and discuss exhumation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
FM2.18	Crime Scene Investigation:- Describe and discuss the objectives of crime scene visit, the duties & responsibilities of doctors on crime scene and the reconstruction of sequence of events after crime scene investigation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
FM2.19	Investigation of anaesthetic, operative deaths: Describe and discuss special protocols for conduction of autopsy and for collection, preservation and dispatch of related material evidences	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Anesthesiology, General Surgery	
FM2.20	Mechanical asphyxia: Define, classify and describe asphyxia and medico-legal interpretation of post-mortem findings in asphyxial deaths	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce/ OSPE			
FM2.21	Mechanical asphyxia: Describe and discuss different types of hanging and strangulation including clinical findings, causes of death, post-mortem findings and medico-legal aspects of death due to hanging and strangulation including examination, preservation and dispatch of ligature material	K	KH	Y	Lecture/Small group discussion, Autopsy DOAP session	Written/ Viva voce/ OSPE			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM2.22	Mechanical asphyxia: Describe and discuss patho-physiology, clinical features, post-mortem findings and medico-legal aspects of traumatic asphyxia, obstruction of nose & mouth, suffocation and sexual asphyxia	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce/ OSPE			
FM2.23	Describe and discuss types, patho-physiology, clinical features, post-mortem findings and medico-legal aspects of drowning, diatom test and, gettler test.	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce/ OSPE			
FM2.24	Thermal deaths: Describe the clinical features, post-mortem finding and medicolegal aspects of injuries due to physical agents like heat (heat-hyper-pyrexia, heat stroke, sun stroke, heat exhaustion/prostration, heat cramps [miner's cramp] or cold (systemic and localized hypothermia, frostbite, trench foot, immersion foot)	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce			
FM2.25	Describe types of injuries, clinical features, patho-physiology, post-mortem findings and medico-legal aspects in cases of burns, scalds, lightening, electrocution and radiations	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce/ OSPE		General Surgery	
FM2.26	Describe and discuss clinical features, post-mortem findings and medico-legal aspects of death due to starvation and neglect	K	KH	Y	Lecture/Small group discussion	Written/ Viva voce			
FM2.27	Define and discuss infanticide, foeticide and stillbirth	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	
FM2.28	Describe and discuss signs of intrauterine death, signs of live birth, viability of foetus, age determination of foetus, DOAP session of ossification centres, Hydrostatic test, Sudden Infants Death syndrome and Munchausen's syndrome by proxy	K	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/Viva voce / OSCE		Pediatrics, Human Anatomy	
FM2.29	Demonstrate respect to the directions of courts, while appearing as witness for recording of evidence under oath or affirmation, examination in chief, cross examination, re-examination and court questions, recording of evidence	A and C	SH	Y	Lecture, Small group discussion, Moot Court, Court visits, Role Play	Role Play during internal assessment			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM2.30	Have knowledge/awareness of latest decisions/notifications/ resolutions/circulars/standing orders related to medico-legal practice issued by Courts/Government authorities etc	A	K	Y	Lecture/Small group discussion	Written/ Viva voce			
FM2.31	Demonstrate ability to work in a team for conduction of medico-legal autopsies in cases of death following alleged negligence medical dowry death, death in custody or following violation of human rights as per National Human Rights Commission Guidelines on exhumation	A	KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce/ OSPE			
FM2.32	Demonstrate ability to exchange information by verbal, or nonverbal communication to the peers, family members, law enforcing agency and judiciary	A and C	KH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce		AETCOM	
FM2.33	Demonstrate ability to use local resources whenever required like in mass disaster situations	A and C	KH	Y	Lecture/Small group discussion	Written/ Viva voce		Community Medicine	
FM2.34	Demonstrate ability to use local resources whenever required like in mass disaster situations	A and C	KH	Y	Lecture/Small group discussion	Written/ Viva voce		General Medicine, AETCOM	
FM2.35	Demonstrate professionalism while conducting autopsy in medicolegal situations, interpretation of findings and making inference/opinion, collection preservation and dispatch of biological or trace evidences	A and C	KH/SH		Lecture, small group discussions, DOAP session	Written/ Viva voce/ OSPE		AETCOM	
Topic: Clinical Forensic Medicine		**Number of competencies:(33)**				**Number of procedures that require certification:(NIL)**			
FM3.1	IDENTIFICATION Define and describe Corpus Delicti, establishment of identity of living persons including race, Sex, religion, complexion, stature, age determination using morphology, teeth-eruption, decay, bite marks, bones-ossification centres, medico-legal aspects of age	K	KH	Y	Lecture, Small group discussion, Bedside clinic, DOAP session	Written/Viva voce/ skill assessment		Human Anatomy	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM3.2	IDENTIFICATION Describe and discuss identification of criminals, unknown persons, dead bodies from the remains-hairs, fibers, teeth, anthropometry, dactylography, foot prints, scars, tattoos, poroscopy and superimposition	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce			
FM3.3	Mechanical injuries and wounds: Define, describe and classify different types of mechanical injuries, abrasion, bruise, laceration, stab wound, incised wound, chop wound, defense wound, self-inflicted/fabricated wounds and their medico-legal aspects	K	KH	Y	Lecture, Small group discussion Bed side clinic, DOAP session	Written/ Viva voce/ OSCE		General Surgery	
FM3.4	Mechanical injuries and wounds: Define injury, assault & hurt. Describe IPC pertaining to injuries	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Surgery	
FM3.5	Mechanical injuries and wounds: Describe accidental, suicidal and homicidal injuries. Describe simple, grievous and dangerous injuries. Describe ante-mortem and post-mortem injuries	K	K/KH	Y	Lecture/Small group discussion	Written/ Viva voce			
FM3.6	Mechanical injuries and wounds: Describe healing of injury and fracture of bones with its medico-legal importance	K	K/KH	Y	Lecture/Small group discussion	Written/ Viva voce		General Surgery	
FM3.7	Describe factors influencing infliction of injuries and healing, examination and certification of wounds and wound as a cause of death: Primary and Secondary	K	K/KH	Y	Lecture/Small group discussion	Written/ Viva voce		General Surgery, Orthopaedics	
FM3.8	Mechanical injuries and wounds: Describe and discuss different types of weapons including dangerous weapons and their examination	K	K/KH	Y	Lecture/Small group discussion	Written/ Viva voce		General Surgery, Orthopaedics	
FM3.9	Firearm injuries: Describe different types of firearms including structure and components. Along with description of ammunition propellant charge and mechanism of fire-arms, different types of cartridges and bullets and various terminology in relation of firearm – caliber, range, choking	K	K/KH	Y	Lecture/Small group discussion	Written/ Viva voce		General Surgery, Orthopaedics	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM3.10	Firearm injuries: Describe and discuss wound ballistics-different types of firearm injuries, blast injuries and their interpretation, preservation and dispatch of trace evidences in cases of firearm and blast injuries, various tests related to confirmation of use of firearms	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic, DOAP session	Written/Viva voce/ OSCE		General Surgery, Orthopaedics	
FM3.11	Regional Injuries: Describe and discuss regional injuries to head (Scalp wounds, fracture skull, intracranial haemorrhages, coup and contrecoup injuries), neck, chest, abdomen, limbs, genital organs, spinal cord and skeleton	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic or autopsy, DOAP session	Written/ Viva voce/ OSCE/OSPE		General Surgery, Orthopaedics	
FM3.12	Regional Injuries Describe and discuss injuries related to fall from height and vehicular injuries – Primary and Secondary impact, Secondary injuries, crush syndrome, railway spine	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic or autopsy, DOAP session	Written/ Viva voce/ OSCE/OSPE		General Surgery, Orthopaedics	
FM3.13	Describe different types of sexual offences. Describe various sections of IPC regarding rape including definition of rape (Section 375 IPC), Punishment for Rape (Section 376 IPC) and recent amendments notified till date	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce/ OSCE/OSPE		Obstetrics & Gynaecology	
FM3.14	SEXUAL OFFENCES Describe and discuss the examination of the victim of an alleged case of rape, and the preparation of report, framing the opinion and preservation and despatch of trace evidences in such cases	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic, DOAP session	Written/ Viva voce/ OSCE		Obstetrics & Gynaecology, Psychiatry	
FM3.15	SEXUAL OFFENCES Describe and discuss examination of accused and victim of sodomy, preparation of report, framing of opinion, preservation and despatch of trace evidences in such cases	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic, DOAP session	Written/ Viva voce/ OSCE		Obstetrics & Gynaecology, Psychiatry	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM3.16	SEXUAL OFFENCES Describe and discuss adultery and unnatural sexual offences- sodomy, incest, lesbianism, buccal coitus, bestiality, indecent assault and preparation of report, framing the opinion and preservation and despatch of trace evidences in such cases	K	K/KH	Y	Lecture/Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology, Psychiatry	
FM3.17	Describe and discuss the sexual perversions fetishism, transvestism, voyeurism, sadism, necrophagia, masochism, exhibitionism, frotteurism, Necrophilia	K	K/KH	Y	Lecture/Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology, Psychiatry	
FM3.18	Describe anatomy of male and female genitalia, hymen and its types. Discuss the medico-legal importance of hymen. Define virginity, defloration, legitimacy and its medicolegal importance	K	K/KH	Y	Lecture/Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	
FM3.19	Discuss the medicolegal aspects of pregnancy and delivery, signs of pregnancy, precipitate labour superfoetation, superfecundation and signs of recent and remote delivery in living and dead	K	K/KH	Y	Lecture/Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	
FM3.20	Discuss disputed paternity and maternity	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	
FM3.21	Discuss Pre-conception and Pre Natal Diagnostic Techniques (PC&PNDT) - Prohibition of Sex Selection Act 2003 and Domestic Violence Act 2005	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology, AETCOM	
FM3.22	Define and discuss impotence, sterility, frigidity, sexual dysfunction, premature ejaculation. Discuss the causes of impotence and sterility in male and female	K	K/KH	Y	Lecture/Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology, General Medicine	
FM3.23	Discuss Sterilization of male and female, artificial insemination, Test Tube Baby, surrogate mother, hormonal replacement therapy with respect to appropriate national and state laws	K	K/KH	Y	Lecture/Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM3.24	Discuss the relative importance of surgical methods of contraception (vasectomy and tubectomy) as methods of contraception in the National Family Planning Programme	K	K/KH	N	Lecture, Small group discussion	Written		Obstetrics & Gynaecology	
FM3.25	Discuss the major results of the National Family Health Survey	K	K/KH	N	Lecture	Written		Obstetrics & Gynaecology	
FM3.26	Discuss the national Guidelines for accreditation, supervision & regulation of ART Clinics in India	K	K/KH	Y	Lecture, Small group discussion	Written		Obstetrics & Gynaecology	
FM3.27	Define, classify and discuss abortion, methods of procuring MTP and criminal abortion and complication of abortion. MTP Act 1971	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology, AETCOM	
FM3.28	Describe evidences of abortion - living and dead, duties of doctor in cases of abortion, investigations of death due to criminal abortion	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology, Pathology	
FM3.29	Describe and discuss child abuse and battered baby syndrome	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pediatrics	
FM3.30	Describe and discuss issues relating to torture, identification of injuries caused by torture and its sequalae, management of torture survivors	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce			
FM3.31	Torture and Human rights Describe and discuss guidelines and Protocols of National Human Rights Commission regarding torture	K	K/KH	N	Lecture/Small group discussion	Written/ Viva voce			
FM3.32	Demonstrate the professionalism while preparing reports in medicolegal situations, interpretation of findings and making inference/opinion, collection preservation and dispatch of biological or trace evidences	A and C	SH	Y	Lecture, Small group discussion	OSPE/Viva voce		AETCOM	
FM3.33	Should be able to demonstrate the professionalism while dealing with victims of torture and human right violations, sexual assaults-psychological consultation, rehabilitation	A and C	K/KH/SH	Y	Lecture/Small group discussion	Written/ Viva voce		AETCOM	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
Topic: Medical Jurisprudence (Medical Law and ethics)		**Number of competencies: (30)**				**Number of procedures that require certification : (NIL)**			
FM4.1	Describe Medical Ethics and explain its historical emergence	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.2	Describe the Code of Medical Ethics 2002 conduct, Etiquette and Ethics in medical practice and unethical practices & the dichotomy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.3	Describe the functions and role of Medical Council of India and State Medical Councils	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.4	Describe the Indian Medical Register	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.5	Rights/privileges of a medical practitioner, penal erasure, infamous conduct, disciplinary Committee, disciplinary procedures, warning notice and penal erasure	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.6	Describe the Laws in Relation to medical practice and the duties of a medical practitioner towards patients and society	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.7	Describe and discuss the ethics related to HIV patients	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.8	Describe the Consumer Protection Act-1986 (Medical Indemnity Insurance, Civil Litigations and Compensations), Workman's Compensation Act & ESI Act	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.9	Describe the medico - legal issues in relation to family violence, violation of human rights, NHRC and doctors	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.10	Describe communication between doctors, public and media	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.11	Describe and discuss euthanasia	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM, Pharmacology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM4.12	Discuss legal and ethical issues in relation to stem cell research	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM, Pharmacology	
FM4.13	Describe social aspects of Medico-legal cases with respect to victims of assault, rape, attempted suicide, homicide, domestic violence, dowry- related cases	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.14	Describe & discuss the challenges in managing medico-legal cases including development of skills in relationship management – Human behaviour, communication skills, conflict resolution techniques	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.15	Describe the principles of handling pressure – definition, types, causes, sources and skills for managing the pressure while dealing with medico-legal cases by the doctor	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.16	Describe and discuss Bioethics	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.17	Describe and discuss ethical Principles: Respect for autonomy, non-malfeasance, beneficence & justice	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM, Pharmacology	
FM4.18	Describe and discuss medical negligence including civil and criminal negligence, contributory negligence, corporate negligence, vicarious liability, Res Ipsa Loquitor, prevention of medical negligence and defenses in medical negligence litigations	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.19	Define Consent. Describe different types of consent and ingredients of informed consent. Describe the rules of consent and importance of consent in relation to age, emergency situation, mental illness and alcohol intoxication	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.20	Describe therapeutic privilege, Malingering, Therapeutic Misadventure, Professional Secrecy, Human Experimentation	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM4.21	Describe Products liability and Medical Indemnity Insurance	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.22	Explain Oath – Hippocrates, Charaka and Sushruta and procedure for administration of Oath.	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM, Pharmacology	
FM4.23	Describe the modified Declaration of Geneva and its relevance	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM, Pharmacology	
FM4.24	Enumerate rights, privileges and duties of a Registered Medical Practitioner. Discuss doctor- patient relationship: professional secrecy and privileged communication	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.25	Clinical research & Ethics Discuss human experimentation including clinical trials	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		AETCOM, Pharmacology	
FM4.26	Discuss the constitution and functions of ethical committees	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM, Pharmacology	
FM4.27	Describe and discuss Ethical Guidelines for Biomedical Research on Human Subjects & Animals	K	KH	N	Lecture, Small group discussion	Written/ Viva voce		AETCOM, Pharmacology	
FM4.28	Demonstrate respect to laws relating to medical practice and Ethical code of conduct prescribed by Medical Council of India and rules and regulations prescribed by it from time to time	A and C	SH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.29	Demonstrate ability to communicate appropriately with media, public and doctors	A and C	KH/SH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
FM4.30	Demonstrate ability to conduct research in pursuance to guidelines or research ethics	A and C	KH/SH	Y	Lecture, Small group discussion	Written/ Viva voce		AETCOM	
Topic: Forensic Psychiatry		**Number of competencies: (06)**				**Number of procedures that require certification: (NIL)**			
FM5.1	Classify common mental illnesses including post-traumatic stress disorder (PTSD)	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Psychiatry	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM5.2	Define, classify and describe delusions, hallucinations, illusion, lucid interval and obsessions with exemplification	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Psychiatry	
FM5.3	Describe Civil and criminal responsibilities of a mentally ill person	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Psychiatry	
FM5.4	Differentiate between true insanity from feigned insanity	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Psychiatry	
FM5.5	Describe & discuss Delirium tremens	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Psychiatry, General Medicine	
FM5.6	Describe the Indian Mental Health Act, 1987 with special reference to admission, care and discharge of a mentally ill person	K	K/KH	N	Lecture, Small group discussion	Written/ Viva voce		Psychiatry	
Topic: Forensic Laboratory investigation in medical legal practice		**Number of competencies: (03)**				**Number of procedures that require certification: (NIL)**			
FM6.1	Describe different types of specimen and tissues to be collected both in the living and dead: Body fluids (blood, urine, semen, faeces saliva), Skin, Nails, tooth pulp, vaginal smear, viscera, skull, specimen for histo-pathological examination, blood grouping, HLA Typing and DNA Fingerprinting. Describe Locard's Exchange Principle	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pathology	
FM6.2	Describe the methods of sample collection, preservation, labelling, dispatch, and interpretation of reports	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce			
FM6.3	Demonstrate professionalism while sending the biological or trace evidences to Forensic Science laboratory, specifying the required tests to be carried out, objectives of preservation of evidences sent for examination, personal discussions on interpretation of findings	A and C	KH/SH	Y	Lecture, Small group discussions, DOAP sessions	Viva voce / OSPE			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
Topic: Emerging technologies in Forensic Medicine		**Number of competencies: (01)**				**Number of procedures that require certification:(NIL)**			
FM7.1	Enumerate the indications and describe the principles and appropriate use for: - DNA profiling - Facial reconstruction - Polygraph (Lie Detector) - Narcoanalysis, - Brain Mapping, - Digital autopsy, - Virtual Autopsy, - Imaging technologies	K	K/KH	N	Lecture, Small group discussion	Written/ Viva voce			
Topic: Toxicology: General Toxicology		**Number of competencies: (10)**				**Number of procedures that require certification: (NIL)**			
FM8.1	Describe the history of Toxicology	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
FM8.2	Define the terms Toxicology, Forensic Toxicology, Clinical Toxicology and poison	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
FM8.3	Describe the various types of poisons, Toxicokinetics, and Toxicodynamics and diagnosis of poisoning in living and dead	K	K/KH	Y	Lecture, Small group discussion	Written/viva voce		Pharmacology	
FM8.4	Describe the Laws in relations to poisons including NDPS Act, Medico-legal aspects of poisons	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		Pharmacology	
FM8.5	Describe Medico-legal autopsy in cases of poisoning including preservation and dispatch of viscera for chemical analysis	K	K/KH	Y	Lecture, Small group discussion, Autopsy, DOAP session	Written/ Viva voce/ OSPE		Pharmacology	
FM8.6	Describe the general symptoms, principles of diagnosis and management of common poisons encountered in India	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic, DOAP session	Written/ Viva voce/ OSCE		Pharmacology	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM8.7	Describe simple Bedside clinic tests to detect poison/drug in a patient's body fluids	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
FM8.8	Describe basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
FM8.9	Describe the procedure of intimation of suspicious cases or actual cases of foul play to the police, maintenance of records, preservation and despatch of relevant samples for laboratory analysis.	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce			
FM8.10	Describe the general principles of Analytical Toxicology and give a brief description of analytical methods available for toxicological analysis: Chromatography – Thin Layer Chromatography, Gas Chromatography, Liquid Chromatography and Atomic Absorption Spectroscopy	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce			
Topic: Toxicology : Chemical Toxicology		**Number of competencies: (06)**				**Number of procedures that require certification : (NIL)**			
FM9.1	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to: Caustics Inorganic – sulphuric, nitric, and hydrochloric acids; Organic-Carboloic Acid (phenol), Oxalic and acetylsalicylic acids	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
FM9.2	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Phosphorus, Iodine, Barium	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM9.3	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Arsenic, lead, mercury, copper, iron, cadmium and thallium	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
FM9.4	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Ethanol, methanol, ethylene glycol	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
FM9.5	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Organophosphates, Carbamates, Organochlorines, Pyrethroids, Paraquat, Aluminium and Zinc phosphide	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
FM9.6	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to Ammonia, carbon monoxide, hydrogen cyanide & derivatives, methyl isocyanate, tear (riot control) gases	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
Topic: Toxicology : Pharmaceutical Toxicology		**Number of competencies: (01)**				**Number of procedures that require certification : (NIL)**			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM10.1	Describe General Principles and basic methodologies in treatment of poisoning: decontamination, supportive therapy, antidote therapy, procedures of enhanced elimination with regard to: i. Antipyretics – Paracetamol, Salicylates ii. Anti-Infectives (Common antibiotics – an overview) iii. Neuropsychotoxicology Barbiturates, benzodiazepins phenytoin, lithium, haloperidol, neuroleptics, tricyclics iv .Narcotic Analgesics, Anaesthetics, and Muscle Relaxants v. Cardiovascular Toxicology Cardiotoxic plants – oleander, odollam, aconite, digitalis vi.Gastro-Intestinal and Endocrinal Drugs – Insulin	K	K/KH	Y	Lecture, Small group discussion, Bed side clinic, Autopsy, DOAP session	Written/ Viva voce/ OSCE		Pharmacology, General Medicine	
Topic: Toxicology : Biotoxicology		**Number of competencies: (01)**				**Number of procedures that require certification : (NIL)**			
FM11.1	Describe features and management of Snake bite, scorpion sting, bee and wasp sting and spider bite	K	K/KH	Y	Lecture, Small group discussion, Autopsy	Written/ Viva voce		General Medicine	
Topic: Toxicology : Sociomedical Toxicology		**Number of competencies: (01)**				**Number of procedures that require certification : (NIL)**			
FM12.1	Describe features and management of abuse/poisoning with following camicals: Tobacco, cannabis, amphetamines, cocaine, hallucinogens, designer drugs & solvent	K	K/KH	Y	Lecture, Small group discussion, Autopsy	Written/ Viva voce		General Medicine	
Topic: Toxicology : Environmental Toxicology		**Number of competencies: (02)**				**Number of procedures that require certification : (NIL)**			
FM13.1	Describe toxic pollution of environment, its medico-legal aspects & toxic hazards of occupation and industry	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine	
FM13.2	Describe medico-legal aspects of poisoning in Workman's Compensation Act	K	K/KH	Y	Lecture, Small group discussion	Written/ Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
Topic: Skills in Forensic Medicine & Toxicology		**Number of competencies: (22)**				**Number of procedures that require certification: (NIL)**			
FM14.1	Examine and prepare Medico-legal report of an injured person with different etiologies in a simulated/ supervised environment	S	SH/P	Y	Bedside clinic (ward/ casualty), Small group discussion	Log book/ Skill station/ Viva voce / OSCE			
FM14.2	Demonstrate the correct technique of clinical examination in a suspected case of poisoning & prepare medico-legal report in a simulated/ supervised environment	S	SH	Y	Bedside clinic (ward/casualty), Small Group discussion	Log book/ Skill station/ Viva voce / OSCE		General Medicine	
FM14.3	Assist and demonstrate the proper technique in collecting, preserving and dispatch of the exhibits in a suspected case of poisoning, along with clinical examination	S	SH	Y	Bedside clinic, Small Group discussion, DOAP session	Skill lab/ Viva voce		General Medicine	
FM14.4	Conduct and prepare report of estimation of age of a person for medico-legal and other purposes & prepare medico-legal report in a simulated/ supervised environment	S	KH	Y	Small group discussion, Demonstration	Log book/ Skill station/ Viva voce / OSCE			
FM14.5	Conduct & prepare post-mortem examination report of varied etiologies (at least 15) in a simulated/ supervised environment	S	KH	Y	Small group discussion, Autopsy, DOAP session	Log book/ Skill station/ Viva voce / OSCE			
FM14.6	Demonstrate and interpret medico-legal aspects from examination of hair (human & animal) fibre, semen & other biological fluids	S	KH	Y	Small group discussion, Lecture	Log book/ Skill station/ Viva voce / OSCE			
FM14.7	Demonstrate & identify that a particular stain is blood and identify the species of its origin	S	KH	Y	Small group discussion, Lecture	Log book/Skill station/Viva voce		Pathology, Physiology	
FM14.8	Demonstrate the correct technique to perform and identify ABO & RH blood group of a person	S	SH	Y	Small group discussion, DOAP session	Log book/Skill station/Viva voce		Pathology, Physiology	
FM14.9	Demonstrate examination of & present an opinion after examination of skeletal remains in a simulated/ supervised environment	S	SH	Y	Small group discussion, DOAP session	Log book/Skill station/Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM14.10	Demonstrate ability to identify & prepare medicolegal inference from specimens obtained from various types of injuries e.g. contusion, abrasion, laceration, firearm wounds, burns, head injury and fracture of bone	S	KH	Y	Small group discussion, DOAP session	Log book/Skill station/ Viva voce/ OSPE			
FM14.11	To identify & describe weapons of medicolegal importance which are commonly used e.g. lathi, knife, kripan, axe, gandasa, gupti, farsha, dagger, bhalla, razor & stick. Able to prepare report of the weapons brought by police and to give opinion regarding injuries present on the person as described in injury report/ PM report so as to connect weapon with the injuries. (Prepare injury report/ PM report must be provided to connect the weapon with the injuries)	S	KH	Y	Small group discussion, DOAP session	Log book/Skill station/ Viva voce/ OSPE			
FM14.12	Describe the contents and structure of bullet and cartridges used & to provide medico-legal interpretation from these	S	KH	Y	Small group discussion, DOAP session	Log book/ Skill station/Viva voce			
FM14.13	To estimate the age of foetus by post-mortem examination	S	KH	Y	Small group discussion, DOAP session	Theory/ Clinical assessment/ Viva voce			
FM14.14	To examine & prepare report of an alleged accused in rape/unnatural sexual offence in a simulated/ supervised environment	S	KH	Y	Small group discussion, DOAP session	Log book/ Skill station/ Viva voce / OSCE			
FM14.15	To examine & prepare medico-legal report of a victim of sexual offence/unnatural sexual offence in a simulated/ supervised environment	S	KH	Y	Small group discussion, DOAP session	Log book/ Skill station/ Viva voce / OSCE			
FM14.16	To examine & prepare medico-legal report of drunk person in a simulated/ supervised environment	S	KH	Y	Small group discussion, Bed side clinic, DOAP session	Log book/ Skill station/ Viva voce / OSCE			
FM14.17	To identify & draw medico-legal inference from common poisons e.g. dhatura, castor, cannabis, opium, aconite copper sulphate, pesticides compounds, marking nut, oleander, Nux vomica, abrus seeds, Snakes, capsicum, calotropis, lead compounds & tobacco.	S	KH	Y	Small group discussion, DOAP session	Log book/ Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
FM14.18	To examine & prepare medico-legal report of a person in police, judicial custody or referred by Court of Law and violation of human rights as requirement of NHRC, who has been brought for medical examination	S	KH	Y	Small group discussion, DOAP session	Log book/ Skill station/ Viva voce / OSCE			
FM14.19	To identify & prepare medico-legal inference from histo-pathological slides of Myocardial Infarction, pneumonitis, tuberculosis, brain infarct, liver cirrhosis, brain haemorrhage, bone fracture, Pulmonary oedema, brain oedema, soot particles, diatoms & wound healing	S	KH	Y	Small group discussion, DOAP session	Log book/ Skill station/ Viva voce			
FM14.20	To record and certify dying declaration in a simulated/ supervised environment	S	KH	Y	Small group discussion, Role Play, Bed side clinic DOAP session	Log book/ Skill station/ Viva voce /OSCE			
FM14.21	To collect, preserve, seal and dispatch exhibits for DNA-Finger printing using various formats of different laboratories.	S	KH	Y	Small group discussion, Lecture	Log book/ Skill station/Viva voce			
FM14.22	To give expert medical/ medico-legal evidence in Court of law	S	KH	Y	Small group discussion, Lecture, DOAP session, role play, Court Visits	Log book/ Viva voce/OSCE			
	Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication. **Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently,** **Column F: DOAP session – Demonstrate, Observe, Assess, Perform.** **Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation**								
Integration									
	Human Anatomy								
AN14.3	Describe the importance of ossification of lower end of femur & upper end of tibia	K	KH	Y	Lecture	Viva voce/Practicals		Forensic Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
Pharmacology									
PH1.22	Describe drugs of abuse (dependence, addiction, stimulants, depressants, psychedelics, drugs used for criminal offences)	K	KH	Y	Lecture, Small group discussion	Written/Viva voce		Psychiatry	Forensic Medicine
PH5.7	Demonstrate an understanding of the legal and ethical aspects of prescribing drugs	K	KH	Y	Small group discussion	short note/Viva voce			Forensic Medicine
Radiodiagnosis									
RD1.13	Describe the components of the PC & PNDT act and its medicolegal implications	K	KH	Y	Lecture, Small group discussion			Obstetrics & Gynaecology, Forensic Medicine	
Psychiatry									
PS19.3	Describe and discuss the basic legal and ethical issues in psychiatry	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Forensic Medicine AETCOM	
General Medicine									
IM20.1	Enumerate the poisonous snakes of your area and describe the distinguishing marks of each	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Forensic Medicine, Pharmacology	
IM20.2	Describe, demonstrate in a volunteer or a mannequin and educate (to other health care workers / patients) the correct initial management of patient with a snake bite in the field	S	SH	Y	DOAP session	Skill assessment/ Written/ Viva voce		Forensic Medicine	
IM20.3	Describe the initial approach to the stabilisation of the patient who presents with snake bite	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Forensic Medicine	
IM20.4	Elicit and document and present an appropriate history, the circumstance, time, kind of snake, evolution of symptoms in a patient with snake bite	S	SH	Y	Bedside clinic, DOAP session	Skill assessment		Forensic Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
IM21.2	Enumerate the common plant poisons seen in your area and describe their toxicology, clinical features, prognosis and specific approach to detoxification	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Forensic Medicine, Pharmacology	
IM21.3	Enumerate the common corrosives used in your area and describe their toxicology, clinical features, prognosis and approach to therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Forensic Medicine, Pharmacology	
IM21.4	Enumerate the commonly observed drug overdose in your area and describe their toxicology, clinical features, prognosis and approach to therapy	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Forensic Medicine, Pharmacology	
IM21.5	Observe and describe the functions and role of a poison center in suspected poisoning	S	KH	Y	DOAP session	document in log book		Forensic Medicine, Pharmacology	
IM21.6	Describe the medico legal aspects of suspected suicidal or homicidal poisoning and demonstrate the correct procedure to write a medico legal report on a suspected poisoning	S	KH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		Forensic Medicine, Pharmacology	
IM21.7	Counsel family members of a patient with suspected poisoning about the clinical and medico legal aspects with empathy	A/C	SH	Y	DOAP session	Skill assessment		Forensic Medicine, Pharmacology	
IM21.8	Enumerate the indications for psychiatric consultation and describe the precautions to be taken in a patient with suspected suicidal ideation / gesture	K	KH	Y	DOAP session	Skill assessment		Forensic Medicine, Psychiatry	
Obstetrics & Gynaecology									
OG1.3	Define and Discuss still birth and abortion	K	KH	Y	Lecture, Small group discussions	Short notes		Forensic Medicine	
OG9.2	Describe the steps and observe/ assist in the performance of an MTP evacuation	S	SH	Y	DOAP session, Bedside clinic	Viva voce		Forensic Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core (Y/N)	Suggested Teaching Learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
OG20.1	Enumerate the indications and describe and discuss the legal aspects, indications, methods for first and second trimester MTP; complications and management of complications of medical termination of pregnancy	K	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Forensic Medicine	
OG20.2	In a simulated environment administer informed consent to a person wishing to undergo medical termination of pregnancy	S/A/C	SH	Y	DOAP session	Skill assessment		Forensic Medicine	
OG20.3	Discuss Pre-conception and Pre Natal Diagnostic Techniques (PC& PNDT) Act 1994 & its amendments	K	K/KH	Y	Lecture, Small group discussions	Written/ Viva voce		Forensic Medicine	
General Surgery									
SU8.1	Describe the principles of Ethics as it pertains to surgery	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce/ skill assessment		Forensic Medicine, AETCOM	
SU8.2	Demonstrate Professionalism and empathy to the patient undergoing surgery	A/C	SH	Y	Lecture, Small group discussion, DOAP session	Written/ Viva voce/ skill assessment		Forensic Medicine, AETCOM	
SU8.3	Discuss Medico legal issues in surgical practice	A/C	KH	Y	Lecture, Small group discussion	Written/ Viva voce/ skill assessment		Forensic Medicine, AETCOM	

List of contributing subject Experts

1. Human Anatomy

- Dr. Praveen R Singh, Professor & Head, Department of Anatomy, Pramukhswami Medical College, Karamsad, Gujarat
- Dr. Nachiket Shankar, Associate Professor, Department of Anatomy, St. John's Medical College & Hospital, Bangalore

2. Physiology

- Dr. Mario Vaz, Professor, Department of Physiology, St. John's Medical College & Hospital, Bangalore
- Dr. Jayashree Sengupta, Former Professor & Head, Department of Physiology, All India Institute of Medical Sciences, New Delhi.
- Dr Hasmukh D Shah, Professor & Head, Department of Physiology, Pramukhswami Medical College, Karamsad, Gujarat

3. Biochemistry

- Dr. Nibhriti Das, Professor, Department of Biochemistry, All India Institute of Medical Sciences, New Delhi
- Dr. S. P. Singh, Professor, Department of Biochemistry, Maharani Laxmi Bai Medical College, Jhansi, Uttar Pradesh
- Dr. Hitesh N Shah, Professor & Head, Department of Biochemistry, Pramukhswami Medical College, Karamsad, Gujarat

4. Pharmacology

- Dr. S. K. Maulik, Professor, Department of Pharmacology, All India Institute of Medical Sciences, New Delhi
- Dr. Vandana Roy, Professor, Department of Pharmacology, Maulana Azad Medical College, New Delhi

5. Pathology

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6. Microbiology

- Dr. S. Geetalakshmi, Dean, Professor, Department of Microbiology, Stanley Medical College, Chennai, Tamil Nadu.
- Dr. Padma Srikanth, Professor, Department of Microbiology, Sri Ramachandra Medical College & Research Institute, Chennai
- Dr. Suman Singh, Professor, Department of Microbiology, Pramukhswami Medical College, Karamsad, Gujarat

7. Forensic Medicine & Toxicology

- Dr. Sanjeev Lalwani, Professor & Registrar (Academics), Department of Forensic Medicine, All India Institute of Medical Sciences, New Delhi
- Dr. T. D. Dogra, Former Director & Former Head, Department of Forensic Medicine, All India Institute of Medical Sciences, New Delhi; currently, Vice Chancellor, SGT University, Gurugram
- Col. Ravi Rautji, Professor & Head, Department of Forensic Medicine, Commanding Officer, Directorate General of Medical Services (Army), New Delhi
- Dr. S.D. Nanandkar, Professor & Head, Department of Forensic Medicine, Grant Government Medical College & Sir J.J. Group of Hospitals, Mumbai
- Dr. Indrajit L. Khandekar, In-charge CFMU and Associate Professor, Department of Forensic Medicine & Toxicology, MGIMS and Kasturba Hospital, Sewagram, Wardha.
- Dr. S. B. Punpale, Professor & Head, Department of Forensic Medicine, B. J. Medical College, Pune, Maharashtra

8. Community Medicine

- Dr. B. S. Garg, Professor & Head, Department of Community Medicine, Mahatama Gandhi Institute of Medical Sciences, Wardha, Sewagram, Maharashtra
- Dr. Umesh Kapil, Professor, Department of Community Medicine, All India Institute of Medical Sciences, New Delhi
- Dr. Sanjay Zodpey, Director, Public Health Foundation of India, Isid Campus, 4 Institutional Area, Vasant Kunj, New Delhi
- Dr. Saudan Singh, Professor, Department of Community Medicine, Vardhman Mahavir Medical College & Safdarjung Hospital, New Delhi
- Dr. Dinesh Kumar, Professor, Department of Community Medicine, Pramukhswami Medical College, Karamsad, Gujarat
- Dr. Pankaj B. Shah, Professor, Deartment of Community Medicine, Sri Ramachandra Medical College & Research Institute, Chennai.

9. General Medicine & Respiratory Medicine

- Dr. Krishna G. Seshadri, Visiting Professor, Endocrinology & Metabolism, Balaji Vidyapeeth, Puducherry
- Dr. M. K. Bhatnagar, Director Professor, Department of General Medicine, Lady Hardinge Medical College, New Delhi
- Dr. Aparna Agarwal, Director Professor of Medicine, Lady Hardinge Medical College, New Delhi
- Dr. Anil Gurtoo, Director Professor of Medicine, Lady Hardinge Medical College, New Delhi

10. Pediatrics

- Dr. Harish Chellani, Professor of Pediatrics, Vardhman Mahavir Medical College & Safdarjung Hospital, New Delhi
- Dr. A. K. Dutta, Former Head, Kalawati Saran Children's Hospital, New Delhi

- Dr. S. Aneja, Director Professor & Head, Department of Pediatrics, Kalawati Saran Children's Hospital, New Delhi
- Dr. Latha Ravichandran, Professor, Deartment of Paediatrics, Sri Ramachandra Medical College & Research Institute, Chennai.

11. Psychiatry

- Dr. Rakesh Kumar Chadda, Department of Psychiatry, All India Institute of Medical Sciences, New Delhi
- Dr. N. M. Patil, Professor, Department of Psychiatry, Jawaharlal Nehru Medical College, Belagavi
- Dr. Rajesh Rastogi, Consultant & Head Department of Psychiatry, Vardhman Mahavir Medical College & Safdarjung Hospital, New Delhi.
- Dr. Jagdish R Varma, Associate Professor, Department of Psychiatry, Pramukhswami Medical College, Karamsad, Gujarat

12. Dermatology, Venereology & Leprosy

- Dr. R. K. Gautam, Professor, Department of Dermatology, Venereology & Leprosy, Dr. Ram Manohar Lohia Hospital, New Delhi.
- Dr. Sujay Khandpur, Professor, Department of Dermatology, Venereology & Leprosy, All India Institute of Medical Sciences, New Delhi
- Dr. S. Murugan, Associate Professor of Dermatology, Sri Ramachandra Medical College & Research Institute, Chennai

13. Physical Medicine and Rehabilitation

- Dr. Sanjay Wadhwa, Professor, Department of Physical Medicine & Rehabilitation, All India Institute of Medical Sciences, New Delhi
- Dr. George Tharion, Head, Department of Physical Medicine & Rehabilitation, Christian Medical College, Vellore, Tamil Nadu

- Dr. Jagdish Menon, Professor & Head, Department of Orthopaedics and Dept. of Physical & Rehabilitative Medicine, Jawaharlal Institute of Postgraduate Medical Education and Research, Pondicherry

14. General Surgery

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- Dr. P. V. Chalam, Former Professor, Department of Surgery, Gandhi Medical College, Secunderabad, Telengana.
- Dr. Dinesh Bhatnagar, Professor, Department of General Surgery, North Delhi Municipal Corporation Medical College, Hindu Rao Hospital, Malka Ganj, Delhi

15. Ophthalmology

- Dr. Smita Singh, Professor, Department of Ophthalmology, Mahatma Gandhi Institute of Medical Sciences, Wardha

16. Oto-rhino-laryngology

- Dr. Achal Gulati, Director Professor, Department of ENT, Maulana Azad Medical College, New Delhi
- Dr. Ravi Kumar, Professor & Head, Department of ENT, Sri Ramachandra Medical College & Research Institute, Chennai
- Dr. Suma Mathew, Professor, Department of ENT, Christian Medical College, Vellore, Tamil Nadu

17. Obstetrics and Gynaecology

- Dr. Neerja Bhatla, Professor, Department of Obstetrics & Gynecology, All India Institute of Medical Sciences, New Delhi
- Dr. Annie Regi, Professor & Head, Department of Obstetrics & Gynecology, Christian Medical College, Vellore, Tamil Nadu
- Dr. Usha Vishwanath, Professor, Department of Obstetrics & Gynecology, Sri Ramachandra Medical College & Research Institute, Chennai

18. Orthopaedics

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- Dr. Raj Bahadur, Professor & Head, Department of Orthopaedics, Postgraduate Institute of Medical Sciences, Chandigarh
- Dr. SC. Goel, Professor, Department of Orthopaedics, Institute of Medical Sciences, BHU, Varanasi, Uttar Pradesh

19. Anaesthesiology

- Dr. Baljit Singh, Director Professor of Anaesthesia, G. B. Pant Hospital, Delhi
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- Dr. Mridula Pawar, Consultant & Head, Department of Anaesthesia, Vardhman Mahavir Medical College & Safdarjung Hospital, New Delhi

20. Radio- Diagnosis

- Dr. Kishor Taori (late), Professor & Head, Department of Radiodiagnosis, Government Medical College, Nagpur

21. Radiotherapy

- Dr. P. K. Jhulka, Dean & Professor of Radiotherapy, All India Institute of Medical Sciences, New Delhi.
- Dr. Shyam Shrivastava, Head, Department of Radiation, Tata Memorial Hospital, Mumbai

22. Dentistry

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